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ABSTRACT

This study examined what would happen when rural librarians were given the tools and training to use networked information resources. Project GAIN demonstrates the effectiveness of linking rural communities to the Internet. Through the local library, six rural communities in New York were connected to a regional network (NYSERNet) and through NYSERNet to the Internet. The objectives of the study were to connect selected library sites to the Internet; to provide training and support necessary for participants to demonstrate competence in using the Internet tools; to educate participants as to the resources of the Internet and how to do resource discovery on their own; to integrate the utilization of the Internet into basic activities and programming of the library; and to explore whether the Internet is a useful resource for rural libraries. Based on these objectives, Project GAIN was successful. The results of this study indicate that rural libraries do profit from such an approach if given the chance and support. It also suggests that rural public libraries must get connected to the Internet if they are to be a key player in the evolving National Information Infrastructure. (Contains 22 references and the survey instruments.) (JLB)

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NYSERNet℠

# The Project GAIN Report

## Connecting Rural Public Libraries to the Internet

A Project Report by
Charles R. McClure, Waldo C. Babcock, Karen A. Nelson,
Jean Armour Polly, Stephen R. Kankus
February 15, 1994

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# THE PROJECT GAIN REPORT:

# CONNECTING RURAL PUBLIC LIBRARIES TO THE INTERNET

Project Evaluation Report Prepared for:

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By

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February 15, 1994

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Copies of the complete report can be obtained from the Publications Office, NYSERNet, 200 Elwood Davis Road, Suite 103, Liverpool, NY 13088-6147 (315-453-2912) for $10.00 (includes postage and handling). For additional information email to <info@nysernet.org>.

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# *PREFACE*

*What happens when an Internet connection and a rural public library join forces? — MAGIC!*

NYSERNet is pleased to provide information on Project GAIN, which extended Internet access and training to five rural New York State public libraries and one Indian nation school. The study began in December 1992 and the evaluation phase has just ended a year later.

***What is NYSERNet?***

NYSERNet is the New York State Education and Research Network, a 501(c)3 not-for-profit corporation. Our mission is to advance effective and ubiquitous network access to information and computational resources, collaborative tools and leading edge technologies to all individuals and sectors within the State of New York and to realize an affordable information structure for all.

NYSERNet sells network connections from low end terminal-to-host dialup to T1 leased lines, adding value such as training, publications, conventions, and helpdesk support. NYSERNet has some three hundred fifty members, comprised of libraries, k-12 and higher education sites, museums, hospitals, R&D businesses, and nonprofit organizations.

Additionally, NYSERNet operates one of the few public VERONICA servers in the world, which allows users to search for information on the Internet.

Other proactive initiatives include a women in science/teenager mentoring program, a Breast Cancer Clearinghouse gopher server and MOSAIC/WWW server, sponsorship of many listserv discussion groups, public packet video reflector using CU-SeeMe, and many other innovative programs.

***How was the Study Funded?***

NYSERNet began seeking funding for this project in September, 1992. A $65,000 grant from the J.M. Kaplan Foundation paid for NYSERNet's project management, the outside evaluator, focus group meetings, site visits, data collection, helpdesk support for the sites, and some equipment and software purchases. It also allowed us to grant $800 to sites who had to make long-distance calls to get network access, to help defray their telecommunications costs.

Again, as part of a NYSERNet proposal, The Apple Library of Tomorrow program, a project of the Apple Library at Apple Computer (Cupertino, CA) awarded Project GAIN one of its four 1993 equipment grants. Each site got a color Macintosh Classic, laser printer, faxmodem, and associated software. Additional Project GAIN sponsors, solicited by NYSERNet, included: OCLC, Addison-Wesley, O'Reilly and Associates, and U.S. Robotics.

***What happened?***

Project GAIN has been an unqualified success. Here are some important reasons why:

- each site has at least one champion who is enthusiastic about the project and will go the extra mile to follow through and make something work.
- each site has standardized on equipment and software. This makes the job of the support team that much easier.
- the type of Internet connectivity (SLIP) the sites were given allowed use of easy communications tools.
- each site has had the same initial training, and has formed a local users group to support one another. Additionally, all the sites communicate with all other sites, so there is a lot of informal sharing taking place.
- telecommunications for long distance calls to the network point of presence were subsidized. Some people felt that the idea of "the meter running" constrained their exploration of the network, and impaired their ability to implement the net into their daily lives. Each long distance site received an $800 subsidy towards their telco costs.
- support, support, support. The project manager, Wally Babcock, followed these sites on an almost daily basis, responding to email and phone queries, and if the sites didn't call him, he called the sites to make sure things were progressing smoothly.

***What's next?***

We have learned a number of other things from the project; besides this final report, a documentary video and CD ROM product will be released later this year. We have both wonderful anecdotal stories and hard numbers which inform the conclusions. The fact that we added an evaluation component, by a respected outside group (Information Management Consultant Services, Inc.), has made Project GAIN a lightning rod for national attention, both from groups who want to replicate the project, and public policy-makers inside the D.C. beltway.

Some of the sites have budgeted to keep their connections past the June 1994 cutoff date, others are scrambling to find funding. We are trying to assist all of them in finding funding as they are a perfect test group for another project: all the equipment, training and enthusiasm is there, raring to go!

James D. Luckett
Vice President and Executive Director
Jean Armour Polly and Waldo Babcock, Co-Project Managers

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# *EXECUTIVE SUMMARY*

Rural America may be falling behind the rest of the nation in its ability to access electronic information despite the fact that it has critical needs for being connected to national electronic networks such as the Internet. The study reported here provides key findings and recommendations that will help the nation in accomplishing President Bill Clinton's policy goal, as outlined in his January 25, 1994 State of the Union Address for "connecting all libraries" to the National Information Infrastructure (NII).

Project GAIN was a pilot project that studied the concept that if rural librarians were given the tools and training to use networked information resources, they could do so effectively and thereby improve the quality of service they offered their patrons. Project GAIN demonstrates the effectiveness of linking rural communities, typically without access to networked electronic information, to a rich and extensive global information environment, the Internet. Via the local library, six rural communities were linked to a regional network (NYSERNet) that in turn connected them to the Internet. This project's implementation objectives were to:

- Connect selected library sites to the Internet
- Provide the training and support necessary for participants at the various sites to be able to demonstrate competence in using the suite of Internet tools provided to them
- Educate participants as to the resources available on the Internet and how to do resource discovery on their own, so they could demonstrate a basic knowledge of resources available and competence in discovering resources appropriate for users' information needs
- Integrate utilization of the Internet into the basic activities and programming of the library
- Explore the basic question of whether the Internet is a useful resource for rural libraries, absent cost concerns.

In terms of these objectives, Project GAIN was very successful. Most individuals at each site display the basic competencies outlined in the first three criteria. Activity on the fourth objective is in process as some

programmatic activity utilizing the Internet is in place at all of the sites. This report accomplishes the last objective.

The evaluation approach combined a quantitative and qualitative methodology. Multiple data collection instruments were developed and administered throughout the project. It should be remembered, however, that this research is exploratory, in that very little prior study of the actual impacts of network connectivity on rural libraries has been done. The evaluation was also both formative and summative, in that data gathered over the course of the project were used for mid-course corrections as well as for a final assessment.

The evaluation of Project GAIN had to be limited to investigating specific aspects of the project due to limited resources. Thus, the evaluation had the following objectives:

- Document impacts on the libraries, their clientele, and the Internet community as a result of obtaining network connectivity
- Identify the factors that contributed to the success of the project
- Identify the factors that limited the success of the project
- Make recommendations for how the project could be replicated successfully in other community environments
- Develop and test a range of data collection instruments related to measuring the impact of Internet connectivity on public libraries.

Ultimately, the evaluation aspect of the project became the means by which a final report was developed for use by other public librarians and policymakers.

The report describes a number of findings that document the impacts of such connectivity on the library, the librarians, the local community, and the Internet community. The report also provides evaluation information that should be helpful for other public libraries that are moving into the networked environment. It outlines the lessons learned from connecting and providing networked-based services; details critical success factors that contributed to the overall accomplishments of the project; and offers a number of recommendations for public librarians, network service providers, policymakers, and researchers for enhancing the role of public libraries in the networked environment.

The results of this study indicate that the approach described in this project is technologically feasible and clearly well within the skills and competencies of typical rural librarians -- if they are motivated and given the necessary support. It also shows that if given a chance, rural librarians and members of the communities they serve can participate as full-fledged citizens of a global electronic community. Finally, the report suggests that rural public libraries must get connected to the Internet and provide networked services if they are to be a key player in the evolving National Information Infrastructure.

# *ACKNOWLEDGMENTS*

The GAIN evaluation team would like to thank, first and foremost, the participants at the six sites. They gave generously of their time, submitted to an unending barrage of questionnaires, and extended their warm hospitality to Wally Babcock when he made his site visits. Many have become friends as well as colleagues over the course of this project.

We also wish to extend a special thanks to the J. M. Kaplan Foundation and Apple Computer, whose generous financial and equipment grants made this project possible. At Apple, we wish to extend a special thanks to Steve Cisler, as well as the rest of the team at the Apple Library.

The evaluation team would also like to extend its thanks to NYSERNet and all its staff. Everyone at NYSERNet contributed in some way to the success of this project.

We also wish to thank OCLC for its generous contribution of First Search access to the participating libraries. In addition we want to thank O'Reilly & Associates, Inc., Addison-Wesley, and U.S. Robotics for their contributions to the project.

Finally, we also want to acknowledge the assistance that Kathleen Flynn provided in organizing and analyzing some of the evaluation data collected during the study.

# *THE PROJECT GAIN REPORT:*

# *CONNECTING RURAL PUBLIC LIBRARIES TO THE INTERNET*

## INTRODUCTION

Public access to information resources is a compelling issue that affects the very fabric of this country. Information, and access to it, is a critical need in a democracy. People in rural areas typically have less knowledge about, and access to, electronic information than those in urban areas. Use of computing technologies and the Internet, however, can be a powerful strategy to equalize access to and use of a broad range of electronic information.

The premise this study investigated was that the public library can serve as the intermediary, or "linking agent," between the rural population and the evolving network of electronic information. The New York State Education Department, in its report The Electronic Doorway Library (1993), has recognized the increasing importance of electronic information and the role public libraries can play in providing access to this information.

Librarians have a history of identifying and meeting users' information needs, and they provide a service perspective of wanting to help their respective communities in acquiring and using information to improve their quality of life. Unfortunately, libraries find themselves in an increasingly tight economic noose. Indeed, many are forced to cut hours of operation as well as funds for new library materials. Rural libraries, with entire operating budgets typically hovering around $30,000-$40,000 per year, have little money for acquisition of reference materials, let alone the services of a professional librarian.

### Importance

The project described in this report demonstrates the effectiveness of linking rural communities, typically without access to electronic information, to a rich and extensive global information environment, the Internet. Via the local library, six rural communities were linked to a regional network (NYSERNet) that in turn connected them to the Internet.

The results of this study indicate that such an approach is technologically feasible and clearly well within the skills and competencies of typical rural librarians -- if they are motivated and given the

necessary support. It also shows that if given a chance, rural librarians and members of the communities they serve can participate as full-fledged citizens of a global electronic community.

One of the key reasons this project was undertaken is the dearth of empirical data concerning the actual utility of networked information, particularly in a rural context. As the debate over the shape of the National Information Infrastructure (NII) develops (Office of the President, 1993a), it is important that the debate be informed by research that allows policy makers to make informed choices. Thus, the evaluation component of Project GAIN was given a high priority.

Studies by Vavrek (1990, 1993) have produced two nationwide surveys of rural residents regarding their information needs and the role of the local library in meeting those needs. Particularly in the later survey, a high demand for access to "computerized information" was noted (Vavrek, 1993, p. 25). In his commentary on the implications of this survey, Vavrek laments the fact that much of the leadership in the library community seems to be reluctant to face the fact that the environment in which libraries operate is being irrevocably changed by the advent of new and varied means of access to information in electronic form (p. 35).

Indeed, rural America may be falling behind the rest of the nation in its ability to access electronic information despite the fact that it has critical needs for being connected (Congress, 1991). Policy issues and recommendations offered in this Congressional study require attention by national policy makers. Further, the telecommunications context and policy system for rural America has been somewhat ignored (Parker, et al., 1989). More research and attention needs to be given to "connecting" rural America to the global society.

McClure et al. (1993) investigated the role of public libraries in the evolving Internet/NREN. They used a variety of data gathering techniques, including surveys, focus groups, and a site visit. They looked at the existing state of librarians' opinions regarding key issues in public libraries' involvement in the networked environment and concluded (p. 32):

> The evolving role of the public library in the networked environment can incorporate the traditional safety net role ensuring that all citizens have access to the network. . . . [New] roles must be created and visions for these roles must materialize now. Immediate public library involvement in the design and structure of the Internet/NREN will ensure that the public library is a key player and stakeholder in the evolving national networked environment.

While the work done in that study was the first of its kind, it examined public libraries from a very broad perspective.

Those readers wishing additional background information about public libraries and the Internet should refer to the references and the sources cited in the references at the conclusion of this report. A literature review of the topic is not included in this report. Nor does this report provide an introduction to navigating the network. The existing literature, however, has not examined the *process* of how a public library would move from knowing little about the Internet to being fully connected and using it as a normal course of action.

Thus, Project GAIN studied the proposition that if rural public librarians were given the tools and training to use networked information resources, they could do so effectively and thereby improve the quality of the services they offered their patrons. This project's main implementation objectives were to:

- Connect selected library sites to the Internet
- Provide the training and support necessary for participants at the various sites to be able to demonstrate competence in using the suite of Internet tools provided to them
- Educate participants as to the resources available on the Internet and how to do resource discovery on their own, so they could demonstrate a basic knowledge of resources available and competence in discovering resources appropriate for users' information needs

- Integrate utilization of the Internet into the basic activities and programming of the library

- Explore the basic question of whether the Internet is a useful resource for rural libraries, absent cost concerns.

In terms of these criteria, Project GAIN is clearly a success. Most individuals at each site display the basic competencies outlined in the first three criteria. Some programmatic activity utilizing the Internet is in place at all of the sites. But the degree of integrating the Internet into basic library services is uneven, and participants from several of the sites are just now, six months into having the equipment and being connected, beginning to reach the "take-off" stage in terms of programming.

The objectives of the evaluation component will be discussed in detail in a later section, but the overall purpose was to obtain empirical evidence that described the impacts of network connectivity on the library, library staff, the library's clientele, and on the Internet community. It is essential to know if network connectivity "makes a difference" either to the library or for the library's clientele. The study reported here assesses how five rural public libraries, and one Indian Nation school used their connections to the Internet. Further, the report attempts to document "good examples" of how rural public libraries can connect to the Internet and successfully use it.

While cost effectiveness is ultimately a very important criterion in deciding which services to offer, Project GAIN attempted to remove the barriers of cost to the libraries in question so that they would be free to use the resources available without constant worry as to the costs being incurred. The project team took the approach that the first priority was to test the utility of using electronic resources in the rural library context, focusing at a later time on how to provide these services in a cost-effective manner.

Although a wealth of data was gathered over the course of the project, the study team was unable to develop and test performance measures to assess the utilization and impact of networked information resources. Such measures need to be developed, and this study hopes to make a modest contribution in achieving that objective.

**Project Overview**

Project GAIN, the Global Access Information Network, provided five rural public libraries and one Indian Nation K-8 school in upstate New York with computers, modems, software, and printers; Internet connectivity (lasting until June of 1994); and a subsidy to defray long distance telecommunications costs to the nearest Point of Presence (POP). It also provided training and support from NYSERNet staff and included an evaluation component. The participants in the study included librarians at each of the sites and a number of local community members. Throughout the evaluation period some 30-35 individuals participated in the project.

Initial funding for the project was obtained by a NYSERNet application for a grant from the J. M. Kaplan Foundation. This grant was supplemented by an Apple Library of Tomorrow grant which provided equipment for the sites and support staff at NYSERNet.

Macintosh computers were the platform of choice, for one basic reason: Macintosh Internet tools are the easiest to install and use. Software like Fetch (for file transfers), Eudora (for mail), TurboGopher, and Mosaic make start-up for newcomers to the Internet easier than other platforms. All equipment was provided on a loan basis until the libraries fulfilled their responsibilities in the study at the end of 1993, at which time the equipment became permanent property of the sites.

NYSERNet gave Serial Line Internet Protocol (SLIP) connections to all sites. This allowed them to take advantage of the complete suite of Internet services, including electronic mail (email), telnet, file transfer protocol (FTP), and gopher. They were also able to utilize the client software mentioned above to provide ease of use of these services. NYSERNet also provided each site with five accounts on a file server maintained at NYSERNet headquarters. This, in conjunction with special configuration of the Eudora software used for email, allowed each site to have five separate mail accounts for library staff and users.

Phase 1: Planning and Tasking
January 1993 - May 1993

The project began in January 1993, and on March 1, 1993, NYSERNet was notified that Project GAIN would be one of four projects in the nation to receive an Apple Library of Tomorrow grant. This news, combined with the Kaplan Foundation grant NYSERNet had already been received, assured the provision of hardware and software to six sites plus funding for the staff necessary for both the implementation and evaluation components of the project.

The six Project GAIN sites were selected after an initial pool of candidates was identified using knowledgeable informants. Next, the study team developed a set of criteria intended to identify those most suitable for participation in the project. Staff at candidate libraries were interviewed in light of these criteria, and then the final sites were selected. Figure 1 depicts the location of the participating sites.

Two interns from Syracuse University's School of Information Studies worked with the study team and NYSERNet's staff to plan the evaluation and implementation aspects of the project. The study team completed the following activities during January-May 1993:

- Developed selection criteria for the sites that might participate in the project
- Conducted telephone interviews with candidate sites
- Based on the interviews, selected participating sites
- Developed the evaluation plan
- Evaluated various alternatives for providing network access to sites
- Designed and implemented network connectivity for the sites
- Obtained contributions from O'Reilly, U.S. Robotics, Addison- Wesley, and OCLC
- Developed a contract governing the responsibilities of NYSERNet and the participating sites, which was then signed
- NYSERNet provided Host-Dial (SLIP) accounts for each site
- Assessed participant's training needs and conducted a Baseline Survey in preparation for the June 14 training session.

Thus, the Spring 1993 phase of the project was largely preparatory in organizing the project, obtaining the necessary resources, and planning the evaluation.

Phase 2: Implementation and Evaluation
June 1993 - December 1993

June 14 Training Session

On June 14, 1993, 14 people from the six sites came to Liverpool, New York for a one-day training session at NYSERNet headquarters. The importance of the project was discussed, and project participants received training in various aspects of network use, including SLIP, telnet, gopher, and email. A hands-on demonstration and training session of OCLC's FirstSearch was also given. At the end of the training, participants from the sites filled out an evaluation form regarding the training, and were given the equipment to take back to their sites.

Prior to the training, efforts were made to insure that all the software and hardware necessary for the project were on hand, set up, and configured properly, and that the training session itself was well-designed to meet the needs of the participants. Each site's Macintosh Color Classic was loaded with software, configured for network access and tested. For the training, the sites' machines were connected to the NYSERNet LAN so that trainees could actually practice accessing the Internet and exploring it, rather than just watching a demonstration.

Set up, configuration, and testing of the equipment minimized problems once the participants returned to their sites, and within two weeks all the sites were up and running. There were many

**FIGURE 1**
**Project Gain -- Participating Sites**

| Community Served | Population Served | 1990 Circulation | Fiscal '91 Budget | Nearest POP |
|---|---|---|---|---|
| Baldwinsville | 26,273 | 191,597 | $443,971 | Syracuse |
| Chautauqua | 2,000 | 39,092 | $118,276 | Buffalo |
| Morrisville | 2,700 | 10,409 | $20,000 | Utica |
| Old Forge | 1,637 | 19,376 | $53,003 | Utica |
| Woodstock | 6,823 | 58,861 | $250,000 | Poughkeepsie |
| Onondaga Nation | | | | Syracuse |

phone calls exchanged between the sites and NYSERNet during this time. They then tapered off dramatically, and most communication after that took the form of email.

Equipment and Software Support

Figure 2 summarizes the direct equipment and software support provided to each site. This particular set-up is exceptionally high quality, i.e., better than what many public libraries would need as a "basic" set-up. The costs associated with each of the items are based on Spring 1993 prices.

In addition to the costs listed in Figure 2, NYSERNet provided training, user services, and technical support, which if prorated would be a cost of approximately $7,795 per site. OCLC donated six months of database access and unlimited searches, which the libraries found extremely valuable, especially for medical information. The value of this service is estimated to be $3,250 for each site. Finally, textbooks were donated by publishers Addison-Wesley and O'Reilly and Associates valued at $65.00 per site. The total of these additional "costs" was $11,110. Thus, the total investment per site was approximately $19,000.

Site Visits

The Research Associate assigned to Project GAIN, conducted site visits during July and August, where further data for the evaluation was gathered and follow-up training was provided. People at the sites were still familiarizing themselves with the tools of networking. Despite the relatively short amount of time they had had their connections, the sites were already using their connections in a variety of ways.

The site visits were an important component of the project in that the study team was able to witness firsthand how the sites were using the connection, answer technical questions related to the connection, and provide additional training on navigating the network.

NYSERNet Gopher

With the initiation of the implementation phase of the project, NYSERNet established a space on its gopher server where information about the project, and material from each of the sites, would be accessible to the broader Internet community as well as to all participants in the project. Initial material included brief descriptions of each public library site, a brief description of the project, and the initial press release describing the project.

If you have gopher client software, point it at nysernet.org, port 70. Material pertaining to Project GAIN can be found in "Special Collections: Libraries/NYSERNet Project GAIN Rural Libraries."

NYSERNet Conference

Participants from all but one of the GAIN sites attended NYSERNet's Annual Conference on September 30 - October 1, 1993. This provided an important opportunity for the participants to get to know each other better, discuss ideas, and develop a deeper sense that they were involved in an exciting and important project.

Final Focus Group

On November 29, representatives from all of the sites participated in a focus group session in Liverpool, NY. This was the last major data gathering effort of the evaluation aspect of the project. It also was an opportunity for GAIN participants to share ideas with each other, NYSERNet staff, and the evaluation team. In addition to conducting the focus group session as part of the evaluation activities, additional training and education about the network also occurred.

Status

The Findings section of this report details the activities of project participants, but by the end of 1993 the sites were using the network successfully in a number of different ways:

**FIGURE 2**

Equipment/Software/Internet Connection Costs for Each GAIN Site:

Hardware:

| | | |
|---|---|---|
| 1. Mac Color Classic 4/80 | | $1,172.00 |
| 2. LaserWriter Select 300 Printer | | 764.00 |
| 3. Apple External CD ROM Drive w/cable | | 425.00 |
| 4. U.S. Robotics Sportster 14.4 Mac & Fax Modem | | 229.00 |
| | Subtotal: | $2,590.00 |

Software:

| | | |
|---|---|---|
| 1. ClarisWorks 2.0 | | 199.00 |
| 2. VersaTilities 1.1 Communications Software | | 85.00 |
| 3. QuickTime Starter Kit | | 109.00 |
| | Subtotal: | $ 393.00 |

| | |
|---|---|
| Total value of hardware and software given directly to a single site | 2,983.00 |
| Host-Dial connectivity/site (includes $250 one-time registration fee) | 2,350.00 |
| Grant for long distance charges (For 4 out of 6 sites) | 800.00 |
| **Grand Total for each site** | **$ 6,133.00** |

- Subscribing and posting messages to various listservs
- Utilizing Internet access to OCLC's FirstSearch to solve thorny reference questions
- Utilizing email on a regular basis
- Collaborating with school librarians on exploring ways the Internet can be used in a school context
- Accessing the Library of Congress's online catalog
- Utilizing the Internet "gopher" for resource discovery
- Collaborating on integrating the Internet into a summer reading program for children
- Exploring ways an Internet connection can be used to help the local business community
- A variety of other programs were in the idea/development stage.

These and other uses suggest that the participants are well on their way to using their Internet connection for a range of applications.

Phase III: Ongoing Program Development
January 1993 - June 1994

While the formal evaluation phase of the project ended in December 1993, the sites retain their network connectivity until June of 1994. NYSERNet will continue to assist in program development regarding the uses of network connectivity at the sites, and hopes to do a follow-up assessment in June 1994 on how the participating libraries are using the network.

Based on the focus group session conducted in November 1993, there is significant interest at the libraries to continue developing networked-based services, exploring the Internet for uses and applications of interest in their particular library, and better integrating networked services into the community. Continued program development is expected to occur at the sites during this time period.

## EVALUATION APPROACH

Evaluation is the process of identifying and collecting data about specific services or activities, establishing criteria by which their success can be assessed, and determining both the quality of the service or activity and the degree to which the service or activity accomplishes stated goals and objectives (Van House, Weil, and McClure, 1990).

Evaluation is a decision making tool that is intended, primarily, to (1) insure that the highest quality services are provided to intended users of those service, and (2) assist decision makers in allocating necessary resources to those activities and services that best facilitate the accomplishment of organizational goals and objectives (Hernon and McClure, 1990). Unfortunately, many networked information services are designed without user input, and worse, are inadequately (if at all) evaluated by those for whom the service was originally intended.

User-based evaluation and determination of user needs should be considered as part of the strategic planning process for the development of networked information services. Thus, developers of networked information services constantly need to ask questions such as the following:

- Who are the users of the service and how well are they able to identify and access a particular service?
- To what degree do networked information services enhance or detract from users' ability to accomplish specific tasks?
- What information resources and services are most important for network clientele and how well does the network deliver these services?
- What are the costs and benefits of specific networked information services and to what degree do these services meet the objectives of both the provider and the user?
- What are the specific strengths and weaknesses of the information services and how do these services affect different user groups?

- Would the provider of the networked information service receive more or better benefits by reallocating resources to new or different information services?

While this list is not intended to be comprehensive, it suggests that user-based evaluation of networked information services should accompany the design and implementation of such services.

While there are a number of criteria that can be used to assess programs, the following formed the basis for the evaluation activities described in this report:

- Extensiveness: how much of the service has been provided, e.g., number of librarians/users who login per week on a bulletin board, or the number of email messages per week.

- Efficiency: the use of resources in networked information services, e.g., cost per session in providing access to remote users of an online catalog, or average time required to successfully telnet to a remote database.

- Effectiveness: how well the networked information service met the objectives of the provider or of the user, e.g., success rate of identifying and accessing the information needed by the user.

- Impact: how a service made a difference in some other activity or situation, e.g., identification of how networked information resources improved or enhanced students' learning.

These four criteria are important elements to consider in evaluating any type of program. As will be shown later, a number of components of Project GAIN did not easily lend themselves to such assessment.

### Evaluation Objectives

The evaluation of Project GAIN had to be limited to investigating specific aspects of the project due to limited resources. Thus, the evaluation had the following objectives:

- Document impacts on the libraries, their clientele, and the Internet community as a result of obtaining network connectivity

- Identify the factors that contributed to the success of the project

- Identify the factors that limited the success of the project

- Make recommendations for how the project could be replicated successfully in other community environments

- Develop and test a range of data collection instruments related to measuring the impact of Internet connectivity on public libraries.

Ultimately, the evaluation aspect of the project became the means by which a final report would be developed for use by other public libraries and policymakers.

### Method

The evaluation approach combined a quantitative and qualitative methodology. Multiple data collection instruments were developed and administered throughout the project. It should be remembered, however, that this research is exploratory, in that very little prior study of the actual impacts of network connectivity on rural libraries has been done. It was also both formative and summative, in that data gathered over the course of the project were used for mid-course corrections as well as for a final assessment.

The following research questions were established during Phase 2 and were intended to direct the development and administration of the various data collection instruments:

- What is the value of network connectivity for rural libraries?

- How does the installation and use of a network connection have impact on library staff, organization, and service provision?

- What groups in the user community benefit from the network connection, and why?
- Do demographic characteristics of the user community, if any, influence the success or failure of implementing a network connection in a particular setting?
- How can a network of rural libraries be established and maintained?
- What are critical success factors for integrating network connectivity into rural libraries' provision of services?
- Are there models to describe the integration of network connectivity into rural libraries?

The project also expected to examine such questions as what difference has access to the network made in the provision of library services, are the benefits of networked information services worth the cost, and are librarians' skills and ability to provide services improved by access to networked information.

### Key Variables

In an attempt to focus our observations during the evaluation, the variables listed below were provisionally identified as being potentially significant in determining the success or failure of integrating networked resources into rural library services. While this list is by no means exhaustive, the evaluation team felt that gathering data pertaining to these variables would be especially important for the study:

- Support: technical advice and problem solving provided by NYSERNet staff and others.
- Training: group and individual instruction in the use of computers, networking tools, and resources.
- Network Knowledge: participants' familiarity with and ability to use network tools, resources, and understand related issues.
- Computer Knowledge: participants' familiarity with and ability to use computers and software successfully.
- Costs: money spent to establish, support, maintain, and use the network connection and resources.
- Benefits: advantages and/or improvements in services gained by the library and community as a result of the network connection.
- Effort: amount of participants' time spent learning about and using network connection.
- Usefulness: practical applications of network resources and tools for the day to day operation of the library.
- Enthusiasm: participants' level of interest in and time devoted to using the network connection.
- Roles: a menu of descriptions of library services and activities from which the library selects those most important or useful for the community.

The attempt to identify, define, operationalize, and determine sources of data for these variables forced the evaluation team to consider which variables were most important to investigate. The process also demonstrated the difficulty that would be encountered in obtaining data to describe all these variables. Additional research is still required to better define and operationalize key variables.

### Data Collection Methods

A variety of data collection methods were used. In this way, the researchers were able to assess program activities from a number of different perspectives. In addition, multiple data collection techniques were intended to enhance the validity of the data gathered. The appendix contains a set of the various data collection instruments used in this study. Data collection methods included:

- Structured Telephone Interviews: These interviews were part of the selection process for candidate libraries, rather than part of the evaluation proper, but useful background data was gathered.

- Training Needs Assessment: Prior to the June 14 training session, a needs assessment survey was mailed to the participants. Background data on participants' level of expertise/comfort with computers and networking was gathered, and the training was designed in response to needs indicated by the survey.

- Training Evaluation Form: Following the June 14 training session, all participants filled out an evaluation form assessing the training. This allowed follow-up training sessions to be modified on the basis of feedback from participants.

- Baseline and Endpoint Questionnaires: At the beginning and end of the project, data were gathered from library staff and users who were working on implementing Project GAIN. These questionnaires provided a range of participants' views on a number of issues and topics.

- Background Demographic Data: A limited amount of background demographic data, using existing data resources, was gathered for each community. These data were helpful in describing the context in which the various libraries operated. They also assisted the evaluation team in identifying any unique conditions at one site that may not have been present at other sites.

- Service Support Log: Staff at NYSERNet maintained a record of the various types of support that they provided to the participants and time required to provide the support. The purpose of the log was to obtain a description of the types of support provided as well as the frequency of that support.

- Email Correspondence: NYSERNet staff received email from participants related to the project which they saved to a separate file. This correspondence provided an important source of user-based information.

- Focus Group Session: The librarians were asked to select a group of users willing to participate in a focus group. A focus group was held on November 29, 1993, in Liverpool, NY. Two staff representatives and one user from each site were asked to participate. Data gathered from this session were used to assess the impact of the network connection on library staff and organization.

- Site Visits: At least one site visit was conducted for each participating institution, during which a member of the evaluation team gathered observational data and provided follow-up training. Both library staff and users participated in the roundtable discussions which were a part of the site visit.

- Logs of Network Use: As a condition of their participation in the project, librarians were asked to keep logs of how they actually used their network connections and were encouraged to add comments regarding problems, successes, etc.

- Analysis of Network Use: Since participants in the project were using accounts on NYSERNet's server for their email, it was possible for the system administrator to provide the evaluation team with a tally of the quantity of email traffic, both incoming and outgoing, on these accounts. The distribution of traffic on the various accounts provided one indication of the depth of penetration of network use in the various libraries.

McClure (1994) describes these approaches in greater detail and discusses their strengths and weakness, thus, they will not be repeated here.

The evaluation team realized that the data collection strategy was ambitious. But in planning the evaluation, it was believed that this was a unique opportunity to assess the process of the libraries getting connected to and using the Internet. Thus, much effort went into designing, pretesting, and administering the instruments -- as well as into data entry and analysis. As a result, at times, the study team found itself with more data than it could analyze effectively.

**Plan Versus Reality**

During the planning stage (Phase 2) of the project, the study team developed an ambitious evaluation plan. Figure 3 describes an overview of the initial plan. Over the course of the project, the evaluation team was forced to scale back from this plan in the following areas:

- The second round of evaluation and training site visits, except in two cases, had to be canceled due to lack of time.
- The midpoint survey was also dropped for the same reason.
- The intended focus groups with library staff and users at each site were consolidated into the November 29 focus group meeting for two staff and one user from each site.

We also found that the email traffic from the sites was a useful source of data. We therefore added an analysis of this email traffic to our evaluation plan. Figure 4 describes the revised evaluation plan, which offered a more realistic set of activities given the resources and time available for the evaluation.

In fact, the study team was unable to completely analyze data from transaction logs and other data collection instruments due to lack of time and staff. Others who are planning on evaluating projects similar to the one described here need to realistically estimate the time required for the various tasks involved in implementing and evaluating the project.

**Analysis of Data**

A range of methods were employed to analyze data from the various data collection instruments. Quantitative data from the questionnaires, logs, training assessment, etc. were coded and entered in a spreadsheet for analysis. The techniques used to analyze these data relied primarily on computing averages and frequencies. Some cross-tabulations among variables also were employed. But the quality and nature of the data did not warrant sophisticated statistical tests.

Qualitative data from the site visits, the focus group sessions, and open-ended questions on the various surveys were analyzed by members of the study team first by producing a written summary of the data. In the case of the focus group, for example, each member of the study team took notes. The notes were organized by the research questions, key themes, or issues. The notes were then compiled, reviewed, and refined by other members of the study team until agreement was reached regarding the results.

Because data were collected from different instruments regarding the same research questions and issues, the study team incorporated findings from both the qualitative and quantitative data analysis together. This process was accomplished by organizing the various datasets in terms of topics suggested by the research questions, the key variables, or other themes as they evolved in the study. In general, the study team found the qualitative data to be much more useful in addressing the research questions.

**Quality of Data Issues**

A variety of data collection techniques and instruments were used over the course of the evaluation. This variety allowed a triangulation on common themes that emerged from the various data collection activities. For example, the study team obtained data describing project impacts from the focus group session, from the site visit, email correspondence, and from the final survey instrument. From this process we were able to compare responses to judge the reliability and validity of those data.

The evaluation team gathered both quantitative and qualitative data. We found that for this sort of project, the qualitative data were actually more valid and useful than the quantitative. The ability to probe and conduct follow-up questions in the focus group session and at the site visits were especially powerful. Traditional quantitative techniques did not lend themselves to a situation like that of Project GAIN, with a small, diverse group of sites, where participants at the end differed significantly from those at the beginning. As an example, the population of librarians and community participants at the

**FIGURE 3**

**Project GAIN: Original Evaluation Flow Chart**

| | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Structured Interview | Design | | Admin. | Summary | | | | | | | | |
| Training Needs Assessment | | | Design | | Admin. | Analyze | | | | | | |
| Baseline Survey | Design | | | | Admin. | Analyze | | | | | | |
| Demographic Data | Gather | | | | | | | | | | Analyze | |
| Training Evaluation | | | | | Design | Admin. | Analyze | | | | | |
| Site Visits | | | | | | Design | Visit 1 | Analyze | | | Visit 2 | Analyze |
| Second Training Evaluation | | | | | | Design | Admin? | | | Analyze | | |
| Focus Groups | | | | | | Design | | | | | Admin. | Analyze |
| Midpoint Survey | | | | | | Design | | | Admin. | Analyze | | |
| User Group Assessment | | | | | | | | Design | | Admin. | Analyze | |
| Site's Network Use Logs | | | | | Design | | Admin. | Analyze | (On-going) | | Analyze | |
| Support Staff Logs | | | | | | Design | Admin. & | Analyze | (On-going) | | Analyze | |
| NYSERNet Transaction Logs | | | | | | Design | Admin. & | Analyze | | | Analyze | |
| Endpoint Survey | | | | | Design | | | | | | Admin. | Analyze |

**FIGURE 4**

**Project GAIN: Revised Evaluation Flow Chart**

| | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Structured Interview | Design | | Admin. | Summary | | | | | | | | |
| Training Needs Assessment | | | Design | | Admin. | Analyze | | | | | | |
| Baseline Survey | Design | | | | Admin. | Analyze | | | | | | |
| Demographic Data | Gather | | | | | | | | | | Analyze | |
| Training Evaluation | | | | | Design | Admin. | Analyze | | | | | |
| Site Visits | | | | | | Design | | Analyze | | | | Analyze |
| | | | | | | | Visit 1 | | | | | |
| Second Training Evaluation | | | | | | Design | Admin | | Analyze | | | |
| Staff and User Focus Group | | | | | | | | Design | | | Admin. | Analyze |
| | | | | | | | | | | | Nov. 29 | |
| Site's Network Use Logs | | | | | Design | | Admin. | Analyze | (On-going) | | Analyze | |
| Support Staff Logs | | | | | | Design | Admin. & | Analyze | (On-going) | | Analyze | |
| NYSERNet Transaction Logs | | | | | | Design | Admin. & | Analyze | | | Analyze | |
| Analysis of Email Traffic | | | | | | | | | Design | | Analyze | |
| Endpoint Survey | | | | | Design | | | | | | Admin. | Analyze |

end of the evaluation period differed significantly from that at the beginning, thus, direct comparisons between Baseline and Endpoint Surveys were impossible.

### Questionnaires

We spent a great deal of time designing, pretesting/refining, administering, and analyzing various questionnaires. The open-ended questions on the endpoint questionnaire provided very useful information, but responses on other parts of the questionnaire were less helpful. The study team found the site visits, email correspondence, and focus group to be much more valuable than a questionnaire in terms of finding out what was happening at the various sites.

The site visits, where the investigator met staff and users in their context, allowed the evaluation team to more accurately gauge the overall status of the project and identify successes and problems than any of our questionnaires. A mutual learning process took place, where the evaluator could provide follow-up training and also learn from users what information needs they had.

Similarly, the November 29 Focus Group allowed several members of the evaluation team to engage in dialogue with representatives of all the sites, and allowed participants from various sites to share ideas with each other. Were the evaluation to be designed again, the study team would recommend greater reliance on the focus group sessions, on-site visits, email correspondence, and training assessments.

### Network Logs

We had also planned to have the sites send in logs of their network use electronically on a weekly basis. After reflection, however, we decided that a print log was the only way we could capture data from all those who were using the system, since we couldn't expect all users to master all the steps involved in keeping and transmitting an electronic log.

Quality of record keeping for these handwritten logs varied greatly. We had asked participants to log all network use over the course of the project, from the time they initially installed and began to use their equipment until October 31. The first batch of logs were collected during the site visits in July and August, and a second (final) batch was mailed to the evaluators after October 31.

In retrospect, the evaluation team feels that asking participants to continuously log their network use led to less than thorough completion of the logs, limiting the quality and usefulness of the data gathered. We would recommend that logs be used for short, clearly delimited periods of time, to get "snapshots" of network use. We also suspect that richer data could be gathered by asking participants to keep journals or diaries of their network use, rather than by the standardized (and somewhat constraining) format of our Network Logs.

### Email Correspondence

The regular and informal email correspondence among the participants and between the evaluation study team and the participants proved to be very rich information for purposes of the evaluation. In the process of developing and implementing the project, comments from the participants provided assessments of specific products and resources. The number of electronic transactions, however, was substantial. The study team spent considerable time reviewing, organizing, and assessing this correspondence in terms of the various research questions.

### Weekly Reports

Midway through the project, we asked participants to begin sending a brief email message on a weekly basis describing how they had been using their connection. These messages were sent to a GAIN "reflector," which forwarded the messages to all participants in the project. This turned out to be one of the most useful and popular aspects of the project, from both an evaluation and implementation perspective. Participants universally praised the information sharing among the sites that resulted and wished this aspect of the project had been begun sooner.

From an evaluation and project management standpoint, these weekly messages brought us closer to what

might be called real time evaluation. While obviously not foolproof, they did provide the evaluation team with a "window" into what was happening at each site. This allowed us to think about what might be a constructive "next step" in terms of implementation and to accumulate information on the status of the project at each site for evaluation purposes.

By contrast, our Endpoint Survey, while gathering valuable data, did not allow a comprehensive cataloging of the many varied activities carried out using the network over the course of the project. This sort of information is much better gathered in real time throughout the project.

### Summary

The study team found that its carefully constructed questionnaires were much less useful than we had expected, while the email reports, focus group session, individual contacts via phone and the net, and site visits were more useful. We would strongly recommend that future projects that involve a small number of heterogeneous sites place a greater emphasis on site visits and regular real-time communication than on questionnaires.

The various data collection instruments, reprinted in the Appendices, are those used in the study. Readers considering an evaluation of networking activities such as those described in this report may be able to modify these instruments for similar assessments. Careful thought and pretesting, however, should be used in modifying these instruments as they were designed specifically for Project GAIN and to assess specific aspects of this project.

## FINDINGS

A number of repeating themes surfaced throughout the data produced by the various data collection instruments. To avoid redundancy and improve readability, this section is organized by those key themes and not by the instruments or the key variables identified earlier.

It must be emphasized that the evaluation period was brief, approximately six months. The participants have expressed some concern regarding the cutoff date for the evaluation. Because of the learning curve involved, the ripple effect of many positive impacts is just beginning to occur. Some participants believe they are just beginning to effectively utilize their connection and hope that readers will understand that if they were able to do this much in such a short period of time, they will be able to do much more in the future.

As a general overview, participants completing the endpoint survey rated the overall success of the project so far as a 2.0 on a scale of 1-4 defined as follows: 1 equals extremely successful, 2 equals successful, 3 equals somewhat successful, and 4 equals unsuccessful. The same participants rated the current level of interest and enthusiasm for the project at their site overall as a 1.6 and the current level of enthusiasm for the project on the part of the library's upper management as a 1.5 on a scale of 1-4 defined as follows: 1 equals extremely enthusiastic, 2 equals enthusiastic, 3 equals somewhat enthusiastic, and 4 equals unenthusiastic. As the following quotes indicate, enthusiasm can be defined several ways:

> With each success, the realities and potentialities of the Internet are talked about in the community, raising the level of awareness. I would describe our site as having several levels of enthusiasm: those who are enthusiastic because they have realized the Internet's potentialities and those who are enthusiastic because they know the potentialities exist.

> People involved in the project are more or less equally split between those who are enthusiastic about the system as they understand and use it and those who are enthusiastic about its potential down the road.

The remainder of this section is structured as follows: impacts from the project on the libraries, impacts on the local communities, impacts on the Internet community, lessons learned, and critical success factors. Throughout, original quotes have been used wherever possible to allow the participants to speak for themselves.

#### Impacts on the Libraries

Participants completing the endpoint survey rated the impact that the connection had on the li-

brary as a 1.6 on a scale of 1-5 defined as follows: 1 equals had a positive impact on my library and 5 equals had no impact on my library. As the following themes attest, the Internet connection had a significant, transforming effect on the libraries' operations and provision of services.

### The Internet as "Super Tool"

Having access to the Internet gave the libraries another tool to use to satisfy patron requests. But this particular tool, the Internet, provided combined access to a range of resources that otherwise could not be acquired in their particular settings. Thus, a key impact of the Internet was to significantly expand the range and scope of information resources available to the library, for both reference work and staff and patron browsing.

### Enhancing Credibility and Leadership

Because of the Internet connection, community members, including children, regarded the library very differently than before they were connected. The libraries gained a leadership role and considerable credibility in their communities. Community members saw the public library as a very innovative, progressive place providing services not available elsewhere; moreover, these services were often seen as very "high tech" services. In some instances, certain community members were surprised that it was actually the library providing such services! As one participant commented:

> The library is increasingly seen as a community resource center rather than just a place for fiction and arts and crafts books.

As is consistent with the public library's education mission, at several sites the library became an education center for other institutions in the community. At one site in particular, the local school got its own connection after a parent who championed the cause was introduced to the Internet by the library.

Success stories regarding satisfied patrons can translate into leverage for additional funding since the library is then seen as an integral part of the community. Two librarians commented:

> Not unimportantly, our local funding sources are beginning to see the library as a vital information center rather than just a repository for the latest best-seller. I have attended the village and town board meetings, and without fail, board members literally sit up and take notice when I relate anecdotes about the project. I see the network connection as a vital resource in maintaining the library's viability in an increasingly changing and technological world.

> We received a budget increase in our town funding because the monthly presentations to the Board emphasized how the connection was helping the citizens become better informed.

These, and similar success stories, suggest increased credibility, visibility, and impact on the local community.

### Library Advocates and Attracting New Users

The connection also brought new patrons into the library, computer literate people who then became library advocates:

> The status of the library may be transformed to a higher plane in some peoples' eyes as I had mentioned above with the computer literate population. And perhaps in some institutions' eyes as well. Herkimer County Community College visited the library to discuss the possibility of using Old Forge as an extension site. I used the Internet demonstration as the grand finale of my tour, and they were most impressed.

Such results were common among the participants and contributed greatly to increasing the credibility and importance of the library.

One of the unexpected results of the libraries obtaining network connectivity was that community members who had previously not been regular users of the library were attracted to it as a result of

their hearing about the library's network connection. This fact, that new library patrons came, as one librarian stated, "out of the woodwork," once word got out that the library had an Internet connection, suggests that network connectivity can attract new customers to the library. It is quite likely that the number of patrons who would be attracted to the library as a network access point will grow in the future, which suggests that network access is a service for which demand exists and the library can meet.

### Keeping Abreast of New Technology

This project served as a wake-up call to the libraries, illustrating the critical importance of keeping in step with the information technology that increasingly permeates and fundamentally alters our lives. The participants noted:

> The presence of the Internet connection has forced the Board of Trustees to carefully consider not only the library's role as a technology/ information leader in the community, but also to think about how to fund that role. This exercise in long-range planning has had a positive effect not only on the Board but on the library as a whole.

> The participation in this project has forced the director to reconsider the role of the public library in the "Information Age." Can libraries, especially rural libraries, continue to be the information and reference centers for their communities? I believe this network connection is one way of reaching that goal.

Until the connection was in place and the librarians, trustees, and community members could "see" the difference that the new technology could make on services, it was very difficult for them to recognize the importance and use of the technology.

### Professional Development

In little time, the librarians learned how to use the net for their own professional development, staying abreast of current issues and talking to colleagues worldwide about problems and topics of mutual interest. The librarians subscribed to a variety of professional discussion groups: PUBLIB (devoted to issues of all kinds facing public libraries), PUBYAC (devoted to the interests of young adults' and children's librarians), KIDLIT (devoted to children's literature), and CONSERVATION DISTLIST (devoted to conservation and preservation issues), to name a few. Said one librarian:

> The access has been invaluable in my professional development, and this has directly impacted all patrons in a positive way, regardless of whether they used the access directly or not.

One of the sites was in the planning process for the construction of a new library, and they used PUBLIB to solicit information about the pros and cons of installing skylights and to solicit examples of publicity that had resulted in successful public referendums for bond issues. Several of the librarians began an email dialogue with rural libraries in the state of Washington participating in a project similar to GAIN called SMILE. As one librarian said, "The realization of simultaneous uniqueness and similarities among rural libraries so far apart was a wondrous thing."

### Improved Reference

The ability to fulfill reference requests improved significantly. A librarian at one of the sites recounted some of her success stories in response to a posting requesting Internet reference success stories. Later, GNN News, a component of the Global Network Navigator online information center provided by O'Reilly & Associates, contacted her for permission to reprint them in a future issue.

As a whole, the libraries needed to make fewer referrals to larger libraries. In fact, another librarian managed to locate an elusive article from an 1870 newspaper held in a distant university archives, despite the fact that two local major universities had been unable to help the patron, and she had this to say about it:

> I will tell you that there are few feelings to match the pride, joy, and headiness that I felt when I put that article into his hands. The joy on his face was pretty special, too. THANK YOU, THANK YOU, THANK YOU, for enabling me to experience this sense of professional and personal pride and for allowing our little library to have the capability to provide this service. I'm on cloud nine!

Several of the sites used a listserv called STUMPERS, which is designed to provide a forum for seeking and providing answers to difficult reference questions. The turnaround time using this method is far superior to that of submitting questions to other traditional sources.

The commercial databases donated by OCLC databases -- ArticleFirst and ContentsFirst -- as well as ERIC, GPO, WorldCat, and MEDLINE were very popular. Access to and use of these resources contributed greatly to the participants' view that a broad range of information resources could be obtained via the Internet and used successfully during the reference process.

### The Public Library as Electronic Matchmaker

Another interesting theme was the evolving role of the library as electronic matchmaker. In this role, the library is able to refer patrons to others on the network, either to specific individuals or by posting a query to a discussion group, to help with a question. The connection allows a patron to discuss his or her information needs directly with others on the Internet.

Clearly, libraries have always done referral services. But this type of referral allows the librarian to say, "I have no idea how to answer that question or who to put you in contact with, but let's post the query to the network." An initial contact on the net may refer a patron to yet another contact. One of the participants related an example of this that involved, eventually, a contact in Australia. This is a new model of reference help. As one patron commented:

> The Internet should be viewed as a gigantic people resource even above a large computer resource. In this sense, the net extends the ability of a library to provide access to information in a way that most people are very comfortable with: asking questions and getting answers. To a certain extent the library has always done this, but the net gives options like Usenet which are orders of magnitude more informed than any small group of people could be.

For rural libraries, largely isolated from many information sources taken for granted at other libraries, this role is an important one for linking their communities to the larger world.

### Increased Interlibrary Loans

With access to a large number of online public access catalogs and other bibliographic databases, both the librarians and the users found themselves requesting significantly more materials via interlibrary loan. In one case, the librarian was convinced that interlibrary loan requests doubled as a result of access to the Internet. One librarian commented that, "I had to have my custodial person start doing interlibrary loan requests!" She also pointed out that her workload increased significantly.

This impact was double-edged. On the one hand the library staff were pleased that users were accessing a broader range of information resources from remote locations. On the other hand, the increase in workload was substantial in a number of cases -- and there was not additional staff available to handle this workload. A number of the participants commented that access to and use of the Internet provided second-level impacts on increasing workloads -- interlibrary loan being just one of those areas.

### Plenty of Resources on the Net for Public Librarians

One librarian commented that she was "amazed to find the breadth and depth of information that

was available via the Internet of use for my community and for me." Others agreed. This statement is an important one as there are still a number of public librarians who are unconvinced that there is much "out there" that would assist them in their library work. The participants also commented, however, that plenty of additional types of information resources and services still need to be provided.

But such comments as "The Internet doubled my reference collection," or "the Internet gave me an entirely new collection of materials that I never had, specifically government and medical information" give testimony to the power of the net to provide "just in time" collections as opposed to "just in case collections" — the latter being what some public libraries currently have.

However, it must be clear that the Internet does not totally replace all other sources of information. In fact, it is sometimes not the best source in a particular situation, as the following quote illustrates:

> Of course, this is something librarians do day in and day out — comparing information sources for utility and cost-effectiveness. Many of the things for which we COULD use the Internet can be provided by strategies that we already have in place, strategies that seem more economical, time- and money-wise.

It was also recognized that access to and use of these additional resources was not "free" after the connection was in place -- there still were long distance telecommunications charges for access, and the time needed to download information also contributed to these costs. But others commented that the access was "free" in the sense that it was not charged against the library's book budget.

### Increased Workloads for the Librarians: How to Balance Job Responsibilities

All participants agreed that the Internet connection resulted in a range of increased workloads and time demands in the following areas:

- Learning and experimenting with the new computer hardware and software
- Learning and experimenting with the new Internet tools and resources as well as reading and answering email
- Providing Internet training for staff and patrons
- Demonstrating the Internet to interested community groups and individuals
- Handling increased interlibrary loan activity
- Receiving additional reference and referral requests as a result of being "known" on the net

One person commented that while the Internet was wonderful, it constantly demanded her attention, time, and patience.

Indeed, the increased time commitments to the Internet did not reduce or eliminate other job responsibilities. Librarians still had books to circulate, story-time to tell, and reference questions to answer. In short, the availability of Internet services increased business and required significant additional time commitments from the librarians while all the other "traditional" services had to be continued.

There was little resolution of the question "What can we stop doing if we are going to be spending time on the Internet?" One person commented that the question was better framed as "How do we use the Internet resources and services that we provide as a reason for obtaining increased staff and funding?"

### Impacts on the Local Communities

As was the case with the libraries themselves, the Internet connection had a positive effect on the members, both individually and collectively, of the communities they serve. Participants completing

the endpoint survey rated the impact that the connection had on the community as a 2.2 on a scale of 1-5 defined as follows: 1 equals had a positive impact on my community and 5 equals had no impact on my community.

A wide range of constituencies used the resources and services on the Internet — students of all kinds (K-12, college, and continuing education), local government, community organizations, businesses, and the general public — suggesting that the Internet has something to offer everyone. One patron stated:

> I don't think there is a person with a brain and a heartbeat that wouldn't find the network very useful and interesting in one form or another. I believe the network is essentially in its infancy. And when it develops from crawling to running, its uses and usefulness will be endless.

In short, the participants were impressed with the opportunities that the connection provided them to better integrate the library into the community.

### Partnering with the Public Schools

Some of the biggest supporters of the libraries' Internet connections came from K-12 school teachers, who are using the Internet to transform both teaching and learning. A number of teachers are using the resources and services provided by AskERIC, an Internet-based program run by Syracuse University as part of the ERIC (Educational Resources Information Center) system managed by the U.S. Department of Education.

AskERIC provides human intermediaries who answer email questions to <askeric@ericir.syr.edu> on education-related topics by consulting the ERIC database and by referring the patron to other resources, both Internet- and print-based. In addition, AskERIC maintains an electronic library filled with all sorts of resources, including a large volume of lesson plans; pathfinders to numerous network resources; bibliographies, digests, and mini-searches on various topics; and pointers to other education-related services.

At the GAIN sites, the lesson plans were extremely popular, as were electronic library entries regarding current research and practice on various topics:

> From AskERIC I have also made contact with the services provided by Skywatch (astronomy information) and Newton's Apple. These are all resources I could not have obtained anywhere else in the area.

Once the teachers became aware of the applications and uses of the Internet, they developed a number of projects and programs, and more are being planned, to integrate the Internet into classroom instruction.

For example, one library is providing background information from listservs and newsgroups for a joint project with the middle school and local university to teach middle school students Japanese. At another site, the seventh grade social studies class is using the Internet for its project on current events and issues entitled "Clash of Issues." In a letter that the school sent to the library, the principal and two teachers speak about the positive impact that Internet access has already had and will continue to have on the lives of the children (see Appendix L).

A number of keypal programs (like a pen pal but over the Internet) with students across the country and the world are in operation, allowing the students to share experiences with their peers firsthand and fostering a global perspective and understanding. "My students do numerous projects on people from other countries and cultures. This will be an opportunity to have instant and current contact with these people."

One site has a keypal project with New Zealand. As the students were exchanging information about their height and weight, it was necessary for them to convert kilos and meters into pounds and feet. Thus, the exchange provided the opportunity to apply math skills in real-time and in a real problem-solving context that was relevant and interesting to the children.

As a result of these projects, the students perceive the library very differently from before. In the words of one teacher, "The kids now say, 'The library is awesome!'" Such a view of libraries is important for stimulating and nurturing children's development and for laying the foundation for lifelong learning at an early

stage of their lives.

Thus, the impact here was tying the libraries directly into local K-12 programs. Such collaboration was seen very positively by local governing boards and funding units. At the moment, this collaboration seems to be based largely on the fact that network access is a scarce resource. However, as connectivity becomes more ubiquitous, the schools, libraries, and indeed other community entities will need to explore how their combined strengths can be developed for maximum benefit to their communities. The ground has been broken for the building of community networks.

### Economic Development

At one site, an employee from the county finance office is using the Internet extensively for an economic development project. In particular, the county is targeting a specific industry and is using various resources on the net to assemble all sorts of information. The employee obtained current international trade information from the U.S. Department of Commerce Economic Bulletin Board. If the same information had been obtained as a print publication, it would have been less current and would have cost money to obtain. A listserv dedicated to the subject of interest gave extensive listings of relevant manufacturers, associations, publications, contact names, and phone numbers not available from any other single source.

The county finance office is also using several other sources of electronic information dedicated to economic development in the rural areas. A new electronic journal, RURALUSA, contains the most recent edition of Rural Conditions and Trends from USDA's Economic Research Service (ERS) as well as ERS reports concerning rural issues.

A listserv entitled ECON-DEV, run by the Economic Development Department in Littleton, CO, fosters the "gardening" concept of economic development, i.e., growing jobs locally, with strategic information as the cornerstone of its program. It focuses on the "best practices, best technology, and best ideas," including management strategies for a high performance workplace.

At another GAIN site, instruction about the Internet has been integrated into the community computer literacy class, thereby expanding the level of computer and network literacy in the workforce. Several sites are havens for writers, and the net could be of economic advantage to the areas, since the writers are using it for research. Patrons have also accessed the Small Business Administration's online bulletin board system.

### Access to Government Information

Providing citizens with access to government information so that they can be an informed electorate is an important role for the public library. But rural public libraries rarely have the budget to acquire Federal information resources. Nor are they likely to be depository libraries for the Government Printing Office. But recently, a great deal of government information has been made available via the Internet (Ryan, 1994). In addition, current plans by the Clinton Administration will place much more information on the Internet (Office of the President, Creating a Government that Works Better & Costs Less, 1993b).

One person commented that having electronic access to a range of government information was like having a whole additional reference service. In a number of instances, information was obtained that otherwise would have required a trip to a law or a Government Printing Office depository library.

Patrons were able to monitor the bill-sponsoring activity of the local Congressmen using LOCIS and track pending legislation using MARVEL through the Library of Congress in Washington, DC. Patrons were also able to keep abreast of current Federal activities, such as agency appointments, and were able to download full-text versions of a variety of government documents: NAFTA, National Performance Review, Health Security Plan, Family and Medical Leave Act, Supreme Court decisions, federal laws, and White House press releases and speeches. Increasingly, more government information and services will be made available over the Internet (Congress, 1993).

### Access to Health and Medical Information

Patrons consulted extensively various sources of health and medical information, particularly MEDLINE, on a variety of topics, such as diabetes, lip infections, neurological conditions, sleep apnea, giardiasis, nutrition information, and the side effects of a particular medication. In fact, MEDLINE was one of the most popular resources at several sites, and the sites lost the interest of some users when the trial period provided by OCLC expired.

Providing citizens with ready access to quality health and medical information is certainly congruent with the current emphasis on health-care reform. For these rural public libraries, access to these sources of information would not have been possible were it not for their connections. Moreover, it was information that was of special interest to and used by the community.

### Enhanced Sense of Community

As was the case with students, adult patrons had numerous national and international keypals. For example, participants at two sites had keypals in Moscow with whom they were sharing information about their lives, their cultures, and perspectives on world events. This direct person-to-person contact does much to foster better worldwide communication and understanding.

At another site, a patron was able to locate a Usenet support group for adult survivors of child abuse, thereby alleviating her sense of pain and isolation.

A number of community members made contact with other individuals electronically that otherwise could not have occurred. The sense of community that such contact provided was important not only for what it meant to the individuals, but also for the library that provided the mechanism by which that enhanced sense of community occurred.

In a time of increasing fragmentation, such human connections are essential to establish a sense of local, national, and global unity. How fitting that a community organization, the public library, should be the instrument by which such connections can be made.

### Lifelong Learning

Numerous participants spoke about how the Internet had heightened or awakened new interest in various subjects. The following quote captures the essence of this theme succinctly: "My horizons are certainly being expanded beyond the vanishing point. SET THE CONTROLS FOR THE SUN!" Support for lifelong learning is a traditional role for the public library. The Internet connection enhanced and supported that role. Moreover, this role will take on increased importance as the Federal government moves forward with its plans to connect the country electronically with the National Information Infrastructure initiative (Office of the President, 1993a).

## Impacts on the Internet Community

As illustrated above, the GAIN sites have benefited tremendously from being connected to the Internet. But it is equally important to note that the Internet community has benefited as well from having the GAIN sites connected.

### Information Provider

The sites have been active participants in various electronic discussion groups, responding to queries and engaging in exchanges of information and ideas. A local zoning officer was able to answer a question regarding economic conditions in the Adirondacks. One librarian was especially pleased that she had been able to direct a question from a librarian "at a large, well-known urban library" to the correct source.

### Building Virtual Communities

As discussed earlier, students are actively engaged in various keypal programs. For example, students at the Onondaga Nation School are corresponding with students in New Zealand, Oregon, and Colorado, giving these distant students the opportunity to have direct contact with Native Ameri-

can peoples. The notion of virtual communities, i.e., communities that are connected by ideas and interest rather than by geographic area, was of great interest in these libraries. Providing a means for community members to participate in a "virtual community" was seen as a major benefit for community individuals.

## Literacy

One of the most profound effects of Project GAIN involves adult literacy. The library director at Morrisville Public Library is a volunteer tutor for an adult literacy program. She has been working with a 51 year old gentleman named Glenn for four years. Glenn could not read a single sentence when they began their work together, and he has made marvelous progress.

Only three months after Project GAIN commenced, Glenn and his tutor sent a posting to PUBLIB, inquiring as to whether other adult learners would like to correspond with Glenn via the net and asking whether any discussion group existed for such a purpose. They also indicated that if no such group existed, they would like to start one if enough people were interested (see Appendix M).

The response to this posting was tremendous, with people from all over the country registering their votes in favor of this idea. The end result was not one, but two, listservs, sponsored by NYSERNet and moderated by the tutor, which are scheduled to be launched March 1, 1994.

LEARNER is a forum which gives adult learners the opportunity and the motivation to practice their reading and writing skills by corresponding with each other. It also serves as a support structure, building self-confidence and allowing learners to share personal experiences, concerns, frustrations, successes, and helpful tips. This medium gives learners the chance to improve their traditional literacy, computer literacy, and network literacy skills at the same time (see Appendix N).

LITERACY is a discussion group for individuals involved in teaching adults to read and write or for individuals concerned with literacy issues in general. The group is designed to encourage the sharing of personal experiences, ideas, helpful resources, and teaching tools and tips (see Appendix O).

Glenn is currently corresponding individually via the net with three people from the Adult Learning Center in Missouri who share remarkably similar circumstances and interests. According to his tutor, "The potential for improvement is incalculable. Glenn has made more significant gains in the past several months than he had for quite a while." The following quote eloquently captures the spirit and impact of this project:

> That single serendipitous and, for Glenn, courageous step that we took that one night as a tutor and learner has been one of the most beneficial, meaningful, and indeed truly beautiful and magical events of this whole project.
>
> The isolation and frustration of an adult who has taken that giant leap to learn to read is especially amplified in a rural environment. For a farmer who could not even read one single sentence a few years ago to have the courage and desire to put a request for friendship and understanding out to the whole world via the net is one of the most brave and selfless acts I have ever witnessed. I am humbled by Glenn's courage and am honored to be his tutor. His request for a discussion and dialogue has resulted in so many good and wonderful things that an entire book would not suffice.
>
> Each email message sent and received shows such growing and learning and the seeds of friendship sprouting. The one Glenn received today literally brought tears of joy to my eyes. His spelling has improved remarkably, and his reading and writing skills have taken on a new dimension.
>
> NYSERNet's offer to sponsor our listservs is a true blessing to all of those learners who have been so alone for so long in their struggle. It is hoped that these discussion groups will bring about that same feeling of global community that the net has brought to so many others.

This real life example of impacts of connectivity in

the area of literacy is significant as it is an unanticipated benefit from connectivity. No one on the project team could have predicted that this type of impact would occur. One wonders what other types of impacts will result that cannot be foreseen.

### Electronic Access to Local Information

Several other sites also have projects of interest to the Internet community in the pipeline. The Onondaga Nation School has plans to put digital images of Native American children's art on the NYSERNet gopher. The Woodstock library plans to compile a "Great Stories from Woodstock" collection to commemorate the 25th anniversary of the Woodstock Festival by broadcasting a call for stories on the Internet.

The Chautauqua Institute is a world-renowned summer education association in Chautauqua, NY, whose mission is to promote lifelong learning in all forms. The Institute has plans to create an extensive Chautauqua Information Center on the NYSERNet gopher. The Center will provide general information about the Chautauqua Movement as well as specific information about the various programs of study and the summer schedule.

### Summary

Project GAIN has helped to give rural areas a legitimacy in the eyes of others by illustrating that they have much to contribute to networked information resources and services. Without the Internet, others wouldn't have access to their knowledge, expertise, ideas, and talents. One librarian stated:

> Many people stereotype rural dwellers as 'hayseeds' or 'hicks.' I think that our participation in this project has shown the world that the rural environment is full of intelligent, varied, exciting, and interesting people.

In short, not only did the participants identify, access, and use a range of resources from the Internet, they also contributed back to the network additional information and services. Indeed, this process is one of the most significant benefits from promoting such universal access to the Internet.

## Lessons Learned

The findings described above provide an overview of the range of impacts that resulted from network connectivity for these rural public libraries. But the project also provided both the participants and the study team with a number of lessons that may be useful for others attempting similar projects.

### You Cannot Provide Enough Training

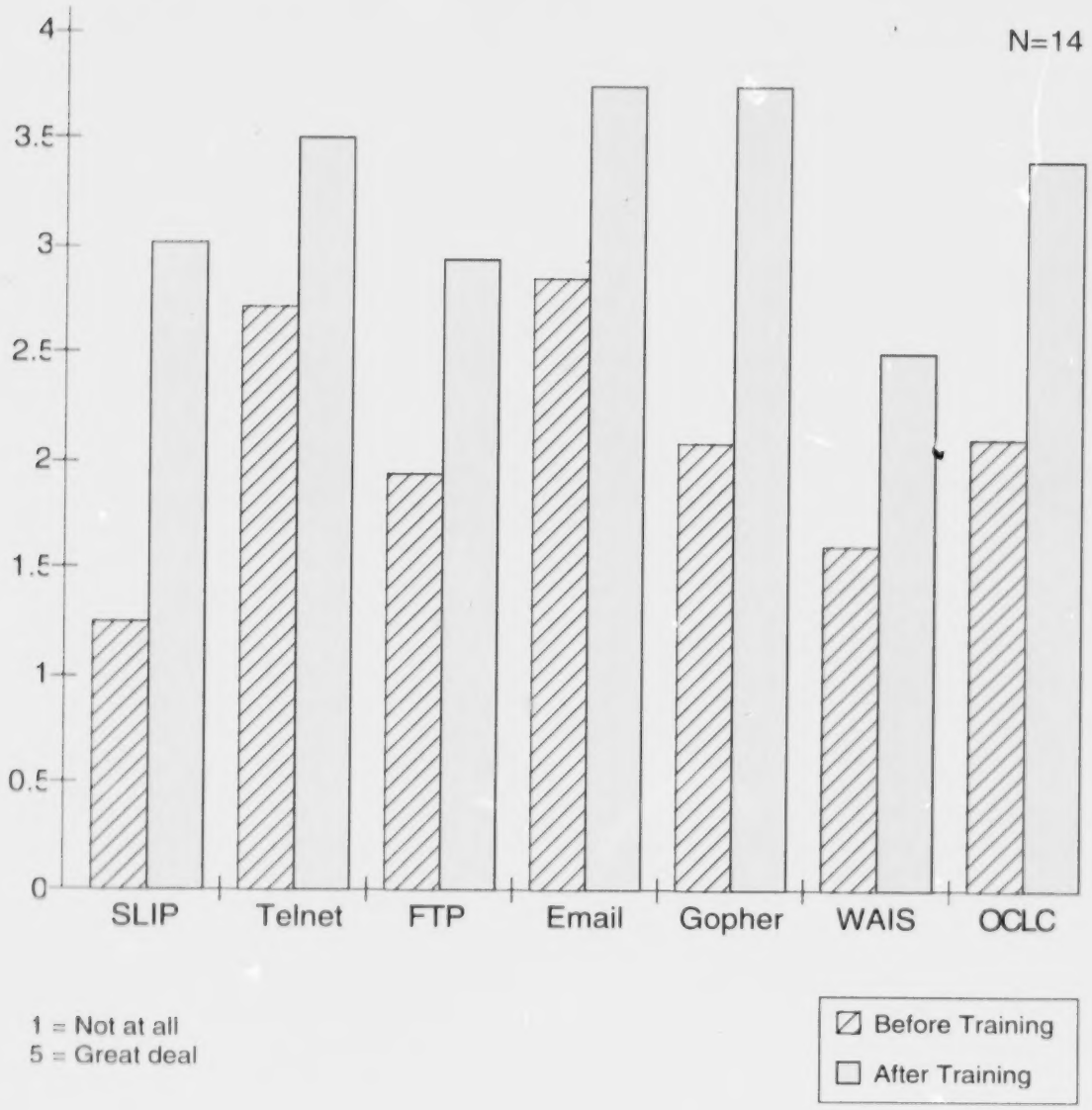
The project participants agreed in the focus group session that the training they received was of high quality and very useful. Figure 5 summarizes the self-assessment of the participants after completing the June 14 training session. Participants completing the endpoint survey rated the quality of training as a 2.0 and the quantity of training as a 2.5 on a scale of 1-4 defined as follows: 1 equals more than adequate, 2 equals adequate, 3 equals somewhat adequate, and 4 equals inadequate.

But, there simply was not enough training, and it was not sequenced with what they were learning by hands-on trial and error education. Too much "hit and miss" activity wasted too much valuable time. Said one participant, "learning the Internet by trial and error is like learning Library of Congress classification by trial and error, only worse!"

For this particular project, we were very fortunate to have one individual at NYSERNet who regularly provided answers to questions via the Internet and telephone. Indeed, his "netside" approach won the accolades of all involved. But, a one-day, general training session at the start of the project, one on-site follow-up training two months later, and ongoing network- and phone-based support was judged as less than adequate by the participants.

Almost everyone indicated that the initial one-day training should have been spread over two days to allow for both a slower pace and more in-depth coverage. The participants also made it clear that NYSERNet should not have underestimated the lack of computer knowledge and should have dedicated perhaps a full day to the Macintosh environment alone, given that several participants had little prior experience using Macs.

**FIGURE 5**
**User's Evaluation of Training: Understanding of Network Tools**



In addition, the sites needed much more follow-up training than they received. While repeated site visits may be logistically impossible, other delivery mechanisms are certainly viable. There was an almost universal cry for step-by-step instructions and user manuals. Online and print training modules and exercises should be developed. One participant suggested a "resource or skill of the week." Several participants suggested the use of simulators so that they could practice without running up enormous phone bills.

Participants were especially hungry for concrete examples and advice about how to apply their connection in specific contexts. They wanted to move from a focus on the tools to a focus on resources and programming — how the Internet can be used by their pluralistic user constituencies. To maintain interest and motivation in mastering the tools, the point of acquiring that mastery must be clear.

In addition, people do not have sufficient time available to spend all of their Internet time navigating. People need navigation aids, at least to the key resources: what they are, where they are, and how to use them. The more resource and programming guides the sponsors of a project can give, the better. This sort of information is critical for successful technology transfer, defined as fully integrating a technology into an organization's operations and thereby realizing its potential.

A sobering aspect of this issue is that the participants probably received more training, and better quality training, than typical public librarians would currently receive when they obtain network connections on their own. Thus, the lesson is clear: When trying to move the public library into the networked environment, training conducted at regular intervals that is hands-on, sequenced from beginning, to intermediate, to advanced, and focused on resources and programming ideas as well as navigation tools is required. In addition, there must be one very knowledgeable person who is easily accessible to provide ongoing assistance — and preferably provide that assistance on site. In short, significant funds *must be* allocated for training and support.

Policy makers must be aware that the isolation of rural areas makes it more difficult to learn how to use networked information resources and services because there are currently few local people capable of providing the requisite training and support. In the future, steps will have to be taken to address this problem.

## Support

One of the factors contributing to the success of this project was the relatively high degree of support available to the participants. The Kaplan Foundation grant allowed NYSERNet to dedicate significant staff time to support and project management. Telephone and email support were extensive, and most problems were resolved within 24 hours of a site's contacting NYSERNet.

The "human factor" is important in providing support for new users. That is, it is important to not only resolve the technical problem, but also to reassure the user that problems are inevitable with the current state of networking technology, and that they are not "stupid" if they are encountering problems. This reassurance and encouragement helped the new users overcome their problems and persist in working on the project.

The support log maintained by NYSERNet through October 31, 1993, indicates that problems can be categorized in the following way:

- Infrastructure (phone line, POPs, NYSERNet host)
- Macintosh operating system
- Hardware
- Communications software
- Network applications
- Accessing and using network information resources
- Administration.

Participants completing the endpoint survey rated the support they received as a 1.4 on a scale of 1-4 defined as follows: 1 equals more than adequate, 2 equals adequate, 3 equals somewhat adequate, and 4 equals inadequate.

One of the discoveries made during the course of this project is that our definition of support needed to be broadened. We defined support as, "technical advice and problem solving," and this is what was logged as support by NYSERNet. This definition, however, does not account for the time spent doing resource discovery in response to specific questions on resources, nor does it include the large volume of administrative traffic that in part played a support role, by fostering program development and providing the participants with the reassurance that was often needed when obstacles were encountered. When these sorts of support matters are factored in, a more realistic figure for "support" provided to all the sites by NYSERNet was 10-12 hours per week.

### Intrasite Communication

User groups at each of the participating libraries need to be formed and need to meet regularly. Internal communication among the participants at a site is very important and needs to be reinforced. This rich reservoir of shared knowledge and ideas is vital for overcoming obstacles and frustration and for maintaining momentum. While individuals alone may not feel as if they are accomplishing much, the aggregate can be quite impressive.

Besides regular meetings of the user groups (which would also include library staff), a public file in electronic and/or hardcopy format of resources discovered would be very useful. Over the course of the project, it was observed that often one person at a site would discover a resource that would be valuable to other participants, but frequently no established mechanism was in place for that information to be shared with other participants. A shared "Resource File" would serve a similar function to regular meetings, in that knowledge acquired by one could be shared with others.

Other activities that would be useful for team building as well as knowledge acquisition would be group participation in the "Internet Hunt," or the selection of a particular topic to research, which the group members would then jointly explore. From the project management standpoint, if such activities are initiated by the sponsoring organization, care must be taken to tune these activities to the skill level of the participants, or frustration and discouragement may result.

### Intersite Communication

Mechanisms also need to be established to facilitate intersite communication and capitalize on the synergy that results from sharing experiences — successes, problems, and solutions. This project had a special mailing list known as the GAIN reflector. Any message sent to this address was distributed to every email account at every site as well as to the investigators. However, the reflector was not really used until about half way through the project. Weekly activity reports and other general correspondence from each site to the reflector should have been implemented from the start since they provide excellent cross-fertilization and motivation in the way of information and idea exchange and also provide a much needed community support structure to mitigate the feelings of isolation and frustration.

### Measuring the Use of the Connection

Despite a range of data collection techniques employed, the study team was unable to collect accurate data describing the number of times the participants accessed specific types of Internet resources or used specific resource discovery tools. The site logs were often not completed and transaction logs at NYSERNet did not capture direct connections to resources since study sites had SLIP connections. With SLIP access such tracking is ineffective, since the site itself becomes a node on the network and does not need to login to NYSERNet's server to access network resources via telnet, FTP, or gopher. Short term sampling may produce better results than the various logs employed in this study.

Further, "counting" the number of times a participant contacted a particular source or service is complicated by the fact that multiple activities occur within a given Internet session. Participants found it time consuming and somewhat frustrating to maintain a detailed log of these activities. In spite of these difficulties, the data do suggest the following:

- Email within a site is unevenly distributed. One or two accounts tend to account for much of the traffic at each site, although the degree of im-

balance varies. This suggests that in most cases, network use did not penetrate evenly in the libraries, but was utilized most extensively by one or two "champions" at each site.

- With a few exceptions, incoming traffic far exceeded outgoing. This was to be expected, since participants were encouraged to subscribe to listservs.

- Total volume of traffic also varied significantly between sites, but greater volume did not necessarily indicate greater utilization of networked resources. By other indicators, some of the sites that had a lesser volume of traffic were actually using their connection more effectively than others which had a higher volume.

These findings also suggest that each site had different "favorite" sources and uses of the Internet. These varied from site to site. Additional work, however, needs to be done to develop data collection methods to better capture and describe actual uses of the Internet.

## Barriers

The Endpoint Survey, the November focus group session, and observations of the evaluation team identified the following as key barriers impeding the successful use of the Internet at the participating sites:

- Telecommunications Charges. A number of the libraries in the project were paying $175 - $350 a month in long-distance phone charges because there was no POP in their local area. The "meter was running" all the time when they were using the Internet, and the stipends provided by the grant for the year of the project are already gone at several sites. Absorbing such an increase per month in the budget could be a significant problem already for a number of the libraries, and the dollar figure will undoubtedly be even higher in the future as usage increases.

- Time. As discussed in an earlier section, there simply was not enough time in the day to maintain the existing services, learn the Internet, and provide Internet-based services. One librarian even had her custodial staff doing interlibrary loan paperwork so she could spend time on the network.

- Training. As discussed in an earlier section, participants felt that they received only adequate training regarding hardware and software, navigation tools, and resources and programming.

- Type of Equipment. The equipment grant provided Macintosh computers. Inevitably, users familiar only with IBM-compatible were in foreign territory. They had to learn the Macintosh environment before they could do anything with the Internet. Tying the implementation of network connectivity to a particular platform results in some users being faced with learning a new operating system as well as the intricacies of the Internet. This is a major challenge. Either thorough training needs to be done regarding the new operating system, or a choice of platforms needs to be provided.

- Complexity of the Internet. The Internet is still not user-friendly in many regards. There are inadequate tools and guides to access and use it, and its organization is often chaotic. Working with it can sometimes be frustrating and intimidating.

- Access to the Computer. One public access connection to the Internet proved to be inadequate once community members became aware of the service. Since no other community organizations had access, everyone came to the library and had to wait in line. This problem was compounded by the fact that some of the libraries are not open as many hours per week as they would like to be because of budget constraints.

- Start Date of the Project. The project began in the summer, which was a bad time for many sites. Several sites are major summer tourist attractions, and both staff and patron vacations were a problem as well. In addition, the schools were not in session.

- Need for Full Text. Staff and patrons were frustrated when they realized that they could not get full text information from many of the sources. People expected instant response in getting what they wanted.

In planning future projects such as GAIN, strategies can be developed to minimize some of these barriers.

### Continuation of the Connection

By June 1994, the libraries must support their own connectivity since project money will end. Some strategies the librarians identified for securing a continuation of the connection were:

- Obtain support from local schools or other community groups. At one site, a community organization is interested in using the connection and is willing to donate some funding to help secure its continuation.
- Convince the governing board that additional direct support to the library is warranted.
- Have the Friends of the Library mount a fundraising program.
- Obtain grants or awards from the state library or other funding sources.
- Redeploy monies from other budget categories.

Everyone recognized that, currently, the libraries were woefully underfunded. Increasing their budgets would require significant lobbying, skillful use of politics, and good luck. But the enhanced credibility, visibility, and impacts resulting from the Internet connections would, the librarians believed, assist them in the process of gaining additional resources.

## Critical Success Factors

In reviewing the range of findings from the project, the evaluation team considers the following factors critical to successfully integrating network connectivity into the provision of rural libraries' services.

- Training and Assistance from a Sponsor. There needs to be someone or something that the library can rely on for a range of training and assistance for both staff and patrons. Were it not for the training and the online assistance provided in this project, many of the participants would not have been able to use the Internet successfully.

  Recognizing that a sponsor obviously cannot train every staff member and patron, the participants suggested that "train the trainer" sessions would be helpful to prepare them to train others. Additionally, one participant suggested that the sites develop a pool of trained volunteers who can help to teach patrons. Students who had themselves been trained might well be a solution here. Serving as volunteer Internet trainers would further their interest in learning and promote their self-esteem while instilling the ethic of volunteerism and community service.

- Strong Commitment and a Positive Attitude. There must be a strong commitment from both the library board and the staff, with a recognition that return on investment will take some time because of the learning curve. Librarians must be willing to experiment and must not be afraid of the technology. Although it is easy to get frustrated, persistence, patience, and fortitude when learning the net are essential.

- Face-to-Face Contact as well as Virtual Contact. While it is impossible to measure, the evaluation team feels that a factor that contributed to the success of the project was the fact that participants met each other face to face, as well as virtually over the Internet. The training session, NYSERNet Conference, and final focus group meeting provided opportunities for the participants to get to know one another, share information, and discuss programs and successes. Both types of contact are important to build a sense of team.

- Adequate Time and Personnel. Adequate time and personnel must be allocated to learning and using this new service. A concern with starting up new projects in any library is what existing services or projects to drop. Librarians cannot be all things to all people all the time. When something "new" goes on the librarian's plate, something else must be taken off that plate.

- Champion in the Library. An enthusiastic champion is essential, and the higher that person is in the hierarchy of the library, the better. The champion's energy and enthusiasm are contagious and set the tone for the project. Additionally, the champion works to insure that sufficient time and resources are dedicated to the project. The presence of a genuine champion is far more important than either the size or resources of the site.

- Champion in the Community. Some of the libraries found a champion in the community who became an avid supporter and promoter of Internet uses. These champions, whether they were school teachers, computer enthusiasts, children, community organizations, or whoever, played a very important role in marketing and promoting the library's networked services to the community. Indeed, it was clear that at some of the sites, the champions were a key factor in the community's involvement and interest in the Internet connection. Once the champion experienced the benefits, he or she "spread the word" to other community members.

  The fostering and perhaps nurturing of community members to champion the uses of the Internet helped the library a great deal to (1) educate its community (2) promote the new service, and (3) increase the library's visibility and credibility as a key institution in the community.

- Proactive Approach to Public Relations and Community Education. Library staff must be informed, active advocates of the service. Do not wait for people to come into the library asking about the Internet connection; go tell them, show them, and demonstrate the value of the service with missionary zeal. People need to know what is available and how it can help them; seeing is believing. The participants agreed that they needed access to a laptop with a LCD panel display and projector so that they could take the Internet to potential users and funders via off-site demonstrations throughout the community. Also, have prepared demonstrations ready to go at a moment's notice to show to people who come into the library.

  Thus far, the sites have used various forms of publicity in addition to word of mouth: making a point of showing the service to patrons who come into the library for other reasons, producing feature articles for local newspapers as well as patron and library system newsletters, attending local government and school board meetings, and providing demonstrations for various community organizations that meet regularly at the library.

- Adequate Budgets and Telecommunications Subsidies. Libraries need better funding overall and help with long-distance telecommunications charges, as these quotes express:

  > There must be a recognition, in the form of money and advocacy, of the role rural libraries play in creating an informed rural community. This recognition must come from funding sources at the local, county, state, and federal levels.
  >
  > There must be a commitment by the federal and state governments to ensure equal access to all citizens, and there must be a recognition of the special needs of the rural areas.
  >
  > Telecommunications providers must make a firm commitment to the importance of equal access. Reduced charges must somehow be effected for rural areas.

- Having Good Basic Computer Hardware and Software. Participants also noted that they had been very fortunate to have received such high-quality equipment from Apple. They recognized that having such state-of-the-art equipment certainly contributed to their overall success.

Enthusiasm and personal commitment on the part of participants is essential. The sense that "we can make this project successful" immediately from project initiation contributed to its success. But attention to the above critical success factors prior to and during the process of connecting rural public librarians is likely to enhance overall success of the effort.

## CONCLUSIONS

The range and extent of the findings from this

study suggest a number of conclusions. Indeed, the study team believes that there are additional conclusions beyond those listed here. Nonetheless, these particular conclusions are seen as especially important as public libraries move into the networked environment.

### Internet Connectivity Is Essential for Rural Public Libraries and Communities

All participants agreed that their network connections produced major inroads into (1) combating isolation and (2) creating a "level playing field" for both the libraries and their communities in terms of having access to information resources and services and in terms of having a voice to affect larger societal issues.

Being isolated from the mainstream of world activities and developments is a very negative aspect of rural life. Access to many traditional sources of information is out of reach both budgetarily and geographically. As the following quotes illustrate, the Internet holds the potential to alleviate this negative aspect of rural life while maintaining the many positive ones. It can enable individuals to think globally while acting locally:

> Because of our limited budget, attendance at conferences and other forms of professional networking that provide discussion of issues has heretofore been impossible. Now shared knowledge and the free exchange of ideas is a daily reality. This has helped me to be a better librarian and allowed me to maintain a global perspective while affirming the importance of our small library in the overall scheme of things.

> Instead of being a small community library, it will become a worldwide library with a small library personality still remaining.

> My life has been changed by our library's participation in this project. The connections made with resources and, more importantly, with people have helped me to become a better librarian and have completely alleviated the sense of isolation that comes with being in charge of a small rural library.

> The Internet has transformed Old Forge from an isolated island to an international airport.

> A network connection, in short, puts a big dent in one of the rural community's biggest disadvantages — intellectual isolation.

> Because rural communities don't have a demographically dense population, their needs are often overlooked, and their voices are often not heard. Internet access is a way for the rural community, through the public library, to be seen and heard.

These communities represent those that are truly in danger of becoming information poor. While the potential clearly exists for the Internet to provide a "level playing field," currently, there is not a "level playing field" regarding telecommunications access charges. A regulatory safety net is needed to insure that these sites and others like them have affordable access to the Internet.

### A Little Money Makes a Big Difference

The range of uses and applications that resulted in these libraries in a very short period of time due to having an Internet connection suggests that relatively little investment in the library can have significant benefits and results. A moderately priced computer, with modem and software, providing a terminal mode dial-up connection would cost, in 1994, in the range of $3,000. (This estimate uses NYSERNet's Transit connection as a basis for illustration.) Telecommunications charges vary from site to site depending on the location of a POP of a telephone connection by an Internet service provider.

For most communities in this country, an investment of $3,000 for equipment and a connection is an incredible bargain. Indeed, in many communities, such an amount is a rounding error in the budget process. These libraries clearly showed that given the resources, they could provide services that significantly enhanced their communities. But without Project GAIN, the libraries doubted if they would have ever had the chance — it likely would have been impossible to convince their local funders to provide the support.

### Long Distance Telecommunication Charges

The annual average cost of the sites' network connection would be $2,100 per year. This represents a significant expense, but our study has found that long distance telephone charges for the sites would actually surpass this cost, on an annual basis. With some sites reporting increases in their telephone bills of between $200 and $350 per month, annual costs to reach the nearest "on ramp" to the Internet currently could exceed $3,000 per year, and these costs are likely to increase as usage increases.

### Difficulty in Providing Public Access

The goal of providing public access to the Internet via the public library takes considerable planning and thought. As suggested in this project, there are a number of key activities and issues that have to be addressed before such public access can be provided. For example, designing the physical facility for the public access terminal, managing the amount of time to be used on the terminal, providing adequate training and assistance to the public, and insuring security and control over the equipment and software only begins to address the key issues.

Libraries participating in the project that did provide public access found that at times they were overwhelmed with requests to use the terminal, that the time required to manage access and provide training was excessive, and that they were constantly forced to choose between giving time to supporting this service as opposed to other library services.

In short, a range of activities will have to occur before the public library can provide direct public access to the Internet. Some online catalog commercial systems now provide seamless connection from within their automated system to the Internet. But for those libraries that are unable to purchase such systems, in-house solutions will be necessary. Those in-house solutions will require planning, training, and policy development before such access can occur.

### The Public Library as a Safety Net for Internet Access

Were it not for these public libraries, the Internet would not be accessible to the general public in these communities. The idea of not providing Internet access to the public struck the participants as simply "wrong-headed." In the words of one woman, "If the public library doesn't provide the public access to the Internet, who will?" In most of these communities, as is true in other communities across the country, it will be some time before there are significant numbers of individuals that have computers and modems.

The notion of the public library as a safety net to insure public access to networked information resources and services seemed to the participants to be a normal and appropriate role for the public library — one that fit nicely with its traditional role in society. The participants commented:

> On the network, if you have questions, all you need to do is ask. I find the people on the network more helpful than in person. It cultivates a spirit of cooperation. The network is a place of almost instant information access. A place for give and take. A place to better educate yourself and others. A place that can be personally enriching on many levels. It's what libraries are all about, and it is something that belongs in libraries.

> A basic principle of American democracy has always been informed citizen participation. Since their inception, public libraries have always tried to freely inform all of their citizens, including the disadvantaged. Information still equals power, and libraries must try to remain free information dispensing institutions for all of their patrons.

The librarians were concerned, however, about how the public library could fulfill this role in a society where there appears to be decreasing resources available to support such a role and limited concern and attention to education, libraries, and lifelong learning.

There was agreement that the public library com-

munity would also have to do a better job of educating the community and the policymakers about what the public library could do as a safety net and why such a role is important. Much work remains, they believed, in convincing both local and national leaders that the public library should be supported to serve this role.

### Connectivity May not be the Key Problem

Connecting libraries to the NII, in and of itself, may not be the most difficult problem to address -- although it certainly will require careful thought and consideration. More important than connectivity will be issues related to who will have what type of access to the NII, how to pay for the costs associated with using the network, training librarians, educating the public on how to use the NII, and developing a range of applications and uses to promote network literacy and enhance the educational system (McClure, 1993). An understanding of the policy issues affecting the use of the NII and a clarification of the policies that will be needed to promote use and impact of the NII are needed *in addition to* connectivity.

### Attitude

To a large degree, the change in knowledge among the participants between the beginning and the end of the project was phenomenal. At the start, most of the participants were unfamiliar with computers and telecommunications; they knew only passingly of the Internet or what it was; and they were very unsure of how the connection would affect their library. But the key ingredient they did have, was a very positive and inquisitive attitude. They *wanted* to learn, they *wanted* to experiment, and they *wanted* to try. This attitude is essential for public librarians wanting to move successfully into the networked environment. The positive attitude appears to be more important than any demographic or community characteristic.

The positive attitude includes a vision of what the Internet is and could be, and it also includes a leadership stance, as demonstrated by the following statement from one of the participants:

> I had a discussion recently with a person who is acquainted with the Internet. His comments were along the lines of, "The network is a very good reference catalog" and "It's a place where professors carry on discussions that are above the average person's head."
>
> I, too, see it as a very good reference catalog. But I also see it as something that is kind of alive. It reminds me of an old "B" movie I saw once where the outer walls of this house were expanding and contracting, breathing. And if you dared go in, the house was full of everything your imagination could conjure up.
>
> The network is also alive and accessible to anyone who dares go in. There are living people out there just waiting to talk to you. There is a newsgroup for every conceivable interest, from biological research to grooming your dog. And not only are these things there, there are live people you can ask questions of, give advice to, and in general just converse with. Yes, I could read a book on any conceivable topic as well, but there is always another question that needs answering, and with each answer, there are more questions. Just a reference catalog indeed : ) NOT!
>
> So the next time somebody tells you it's just a reference catalog, in your best Vincent Price impersonation, dare them to come in.

It is this type of positive, enthusiastic attitude that may be the most important component for success in the networked environment. Public librarians who demonstrate such an attitude, have a vision, and are willing to commit time and energy to the effort will transform their communities.

## RECOMMENDATIONS

The range of activities covered by Project GAIN provided a wealth of information related to the uses of the Internet by rural public libraries. The results of the evaluation, described earlier in this report, also suggest a number of recommendations that

should be considered by public librarians, network services providers, network policymakers, and researchers. The following section describes these recommendations and offers strategies for how they might be implemented.

### For Public Librarians

This project demonstrated that public librarians, with little formal training in networking, could, indeed, get connected to the Internet, use a range of services, and have an impact on their local communities. The evaluation, however, also suggests areas where public librarians should take a number of actions.

#### Obtain Basic Networking Equipment and Connectivity

Participants in Project GAIN obtained computers, modems, software, and other support because of the various grants. But the vast majority of public libraries will not receive such awards to obtain the basic equipment and software necessary for connecting to and using the Internet. Public librarians must develop strategies for obtaining resources to purchase the necessary equipment, pay connectivity fees, obtain training, and otherwise support their Internet connections.

The position that public libraries cannot afford to connect to the Internet is better stated that public libraries cannot afford to be *unconnected* to the Internet. For the price of $3,000 a library can obtain excellent quality equipment and software that would allow an Internet connection. For many libraries, equipment is on-hand; they simply need to obtain a connection from a local service provider. Without equipment and connectivity, public libraries cannot have the successes and impacts outlined in this report.

#### Increase Community Awareness

For public librarians to be successful as they move to the networked environment, they must also educate their community, users, and governing boards. Such a move requires, first, that the public librarians, themselves, are knowledgeable about the Internet and its applications. But next, they must constantly be looking for opportunities to increase their community's awareness of the Internet, educate it regarding the net's possible uses and applications, and demonstrate *real* impacts, uses, and benefits from connectivity to the Internet.

The successful strategies here are to (1) bring opinion leaders from the community into the library to observe firsthand what the Internet is and how it works, and (2) go to local community meetings to talk about and demonstrate the uses and applications of the Internet. It is essential that the librarians demonstrate impacts that Internet uses would have in *their* communities. While there certainly are numerous applications that the librarians can use, themselves, to better operate the library, developing programs such as those described earlier in this report significantly increases both awareness and interest.

#### Create Innovative Networked Information Services

There are a broad range of new, innovative, and exciting services that public librarians can provide in a networked setting. These networked services include international keypals between local children and those in a foreign country, community discussion lists to discuss key issues, development of a user's own customized electronic library from sources around the world, or electronic booktalks, to name but a few. Public librarians are only now beginning to think about the possibilities of electronic services to their communities in this networked environment. Clearly, more attention needs to be given to developing networked information *services*. More experimentation and innovative ideas are needed in this area.

#### Promote Network Literacy

A traditional service role of the public library has been to promote literacy among the population. The public library will need to also promote network literacy in addition to traditional types of literacy. Simply stated, network literacy is the ability of an individual to use computer and telecommunications equipment to identify, access, and obtain information that is available on the Internet. Increasingly, those individuals who are network illiterate will find

themselves significantly disadvantaged in society. Public libraries can assume responsibility for educating those in society about how to access and use networked information and services.

### Collaborate with Other Local Organizations

Within many local communities are a host of organizations that are potential partners to work with the public library in providing Internet services to the community: schools, community colleges, other higher education institutions, agriculture extension agencies, medical facilities, private firms, government agencies, social groups, and others. The public library can serve as an important link among these various groups by taking the lead to organize access to the Internet and developing strategies for how such access could benefit other organizations in the community.

For some public librarians, apparently, the prospect of Internet connectivity appears to be too large a challenge for them to address alone. There are, however, other organizations in the community that can work with the library to plan, fund-raise, and install the appropriate equipment. The important ingredient in collaborative initiatives is *vision*. The public library must take a leadership role, offer a vision, and outline strategies for local groups to work together to get connected.

### Redeploy Existing Resources

If public librarians wait for "their ship to come in" to provide additional resources and support for moving to the networked environment, they may never make the transition. Currently, the public library is caught between maintaining support for a range of traditional services and activities and also trying to move into the networked environment. While there certainly are strategies for obtaining additional resources, public librarians must be prepared to redeploy existing resources to support the move to the networked environment and, perhaps leave behind some traditional resources and information services in the process.

How best to redeploy existing resources and what types of information resources and services to leave behind in the transition will have to be determined on a case- by-case basis by each library. For example, some traditional print reference sources may not need to be purchased when the library is fully connected with Internet access. These resource allocation redeployments will require careful thought, but they will be necessary for most public libraries trying to move to the Internet.

### Establish a National Training Effort

Currently, the process by which public librarians learn about and are trained to use the Internet is uneven at best and nonexistent at worst. If public librarians are to become knowledgeable about the Internet, how to connect to it, and how to use it as part of their library's normal services, a national training effort is needed. Language proposed in the National Information Infrastructure Act of 1993 (H.R. 1757) states that resources should be made available to:

> Train teachers, students, librarians, and state and local government personnel in the use of computer networks and the Internet. Training programs for librarians shall be designed to provide skills and training materials needed by librarians to instruct the public in the use of hardware and software for accessing and using computer networks and the Internet.

But where, specifically, these resources will come from, what kind of training would be done and by whom, how the resources would be distributed, and who would administer and evaluate the process are not clear.

Public librarians, the professional library associations, Internet service providers, the state library agencies, the U.S. Department of Education and other Federal agencies, and educational institutions must develop a coherent plan to accomplish the objectives outlined in H.R. 1757. As shown in this study, public librarians have the skills and motivation to move to the networked environment. But to make this transition they will need a range of support -- the most essential being training.

### For Network Service Providers

Network service providers, in this case NYSERNet, can improve the success with which they deal with public libraries through a number of techniques. Overall, however, the role of the service provider to support the public library connection to the Internet is essential.

#### Reevaluate Value-Added Services for Public Libraries

Internet service providers need to work directly with the public library community to better identify specific types of value added services that might be provided. For example, the provider might negotiate group licensing arrangements to make electronic data bases available to members, provide demonstrations of Internet uses to members in the local community, or it might develop or organize gophers of lists that are of specific interest to the public library community. Perhaps due in part to the limited resources available to most public libraries, the development of network services targeted at public libraries has been limited. Internet service providers should reassess what types of services can be provided to public libraries that are significant yet reasonably priced.

#### Develop and Provide a Range of Training Programs

One of the most important critical success factors for public libraries on the Internet is training and education. Initially, the service provider should provide a program that increases awareness of what the Internet is and how it can be used by the public library. Then there should be a range of training *programs* that deal with technical matters, Internet basics, resource discovery tools, and network-based program development. These are but a few of the topics that would be especially useful for public libraries.

It is important that the service provider carefully design a program of instruction as opposed to offering "canned" programs. Thus, a needs assessment of the instructional needs of the library participants should be undertaken prior to providing instructional programs. The programs should be sequenced over time to allow participants to learn and experiment with their new knowledge. Further, the training should be a "hands-on" approach that encourages one-on-one interaction between the participant and the instructor.

#### Promote Evaluation Research

Throughout this project, there was an ongoing tension between the evaluation and implementation aspects of the project, as evaluators also were implementing the project at the same time. Time spent on support, training, and program development cut into time for preparing evaluation materials, administering data collection instruments, and analyzing results. Based on this experience, the evaluation team recommends that these two activities are separated better and that specific support and attention be given to the evaluation activities by service providers.

Indeed, network service providers must develop more formal mechanisms to engage in ongoing evaluation research of their products and services. In most instances, services and products are developed and implemented with no assessment of the degree to which they meet user information needs. Service providers should develop such expertise in-house or contract for such support. Regardless of the approach, more attention must be given to evaluating the effectiveness of various services and products Service providers should redeploy *their* resources to support such activities.

### For Policymakers

The findings from the evaluation suggest that public libraries in rural settings can make a significant difference in the provision of networked information to their communities. There is, however, little public policy -- especially at the Federal level -- to support this effort.

### Define a Federal Role to Support Public Libraries In a Networked Society

In recent policy statements from the Clinton Administration as well as proposed Congressional legislation, there is clear mention of the importance of connecting libraries to the Internet. But there is no clear picture of what role public libraries might serve in this networked environment nor is there a clear picture of what the responsibility of the Federal government is in supporting public libraries to move to the networked environment.

For example, public libraries might serve as a safety net to society by providing public access to the Internet. With public access terminals to the Internet in the nation's public libraries, there would be improved likelihood for universal access to the Internet. Or perhaps the public libraries could take on responsibility to promote "network literacy" much as they have promoted traditional literacy training. Regardless of the particular role, Federal policymakers and the public library community must do a better job of clarifying possible public library roles in the NII and determining how the government can support the libraries' transition into these roles.

### Develop Statewide Networks

In addition to considering the Federal role in supporting public libraries in the networked environment, individual states can also develop initiatives that establish networks, connect public libraries to the networks, and develop and share electronic services. In the state of Maryland, the Seymore project provides a broad range of electronic information to public libraries via the Internet. It is supported by the Maryland State Library (1993) and is an excellent example of such an approach. Another initiative in the state of New York is "The Electronic Doorway Library," also being developed by the state library (New York Education Department, 1993). State policymakers can learn from these initiatives and initiatives in other states, to promote public library involvement in the Internet.

### Use Public Libraries to Provide Government Information and Services

The Clinton Administration has produced a number of reports that recommend government services and information be developed and delivered in an electronic, networked medium. For example, individuals will soon be able to check on their social security accounts, obtain direct information about crop predictions, or obtain current census data. Not only government information, but government services would be made available via the network. Indeed, many agencies already are engaged in electronic services delivery.

The nation's public libraries can provide an excellent delivery mechanism to insure public access to electronic information. As Senator Edward Kennedy recently stated (1994, [p.3]):

> Public libraries are a vital information link between the government and the public. . . , libraries must continue to play a critical role in providing broad access to the public. Libraries can guide citizens of all ages through the world of computer networks. As more government information and access are available on-line, libraries will make the government less remote and more responsive to the needs of individual citizens.

With public access Internet terminals in each public library, all members of the public would have the opportunity to take advantage of electronic government services. Policy should be developed to support the public library's role in this area and to help public libraries serve as a safety net that insures public access to electronic government information and services.

### Provide Local Dial-Up Access

Until rural areas can access national and international networks such as the Internet with a local telephone call, they will be at a serious disadvantage in comparison to urban areas, where such local dial-up access is the norm. Local access is unlikely to come about strictly by market forces. Thus, a very important policy initiative that Federal and state governments could undertake is to implement policies that make local dial-up access a reality. The

private sector, especially the telephone and telecommunications sector, must also take on responsibility in this area. Currently, despite the best intentions of the public library community, the long distance telecommunication charges may make connection to the Internet impossible.

### For Researchers

Additional attention must be given to conducting more, and more extensive, research related to public libraries and the Internet. Such research is essential if librarians, providers, and policymakers are to better understand and assess possible roles of public libraries in the networked environment.

#### Carefully Determine Which Activities to Evaluate

In Project GAIN, the evaluators developed too elaborate an evaluation design given the available resources and requirements for successful equipment implementation, and they administered more data collection instruments than needed. In fact, they collected so much data that some of it could not be analyzed due to lack of time and resources. In determining which activities to evaluate, the following criteria may be useful:

- Feasibility: the degree to which the activity can be easily evaluated with limited time and resources.
- Actionability: the degree to which the activity can, in fact, be modified or an intervention can improve it.
- Reliability and Validity of Data: the degree to which reliable and valid data can, in fact, be obtained from the data collection activity.
- Impact: the degree to which the data will assess direct and indirect impacts from network connectivity on librarians, community members, the library overall, or other items.

While other criteria are also useful, the guiding recommendation is to collect less data of more usefulness and quality.

#### Measuring Impacts

At the beginning of this project, the evaluation team hoped to produce a range of performance measures that could be used to assess the impact of the Internet on libraries, librarians, and the local community. While some significant progress was made in this area, much remains to be done. The limited time and resources that were available for the evaluation component hindered conceptual analysis and development of how such performance measures might evolve.

Thus, the key research question that still remains is how best to measure impacts of network connectivity in public libraries. The evaluation team believes that the impacts identified earlier in this report are a significant step forward. Additional research attention, however, needs to be given to:

- Operationalizing key variables related to the impact of the Internet on public libraries.
- Developing conceptual models that describe the relationships among the library and a host of other institutions and organizations in society.
- Developing and describing new service roles to augment those proposed in Planning and Role Setting for Public Libraries (McClure, et al., 1987).
- Developing, testing, and validating performance measures that assess the public library in a networked environment.
- Developing simpler and easier-to-use data collection instruments with more accurate responses.
- Extending the use of qualitative indicators and criteria to assess the impact of the network on public libraries.

In short, there needs to be much more research support to address these and related topics. State library agencies, the U.S. Department of Education, the National Telecommunications and Information

Administration, and other funding sources should review their program efforts and provide some additional support to libraries and researchers attempting to work in this area.

The age-old problem of "what good is the public library?" will not go away simply because the library is able to move into the networked environment. Instead, a new set of assessment techniques and strategies will be needed. Except for the effort described in this report, the public library community is poorly prepared to respond to questions regarding how being "networked" will make clear and tangible improvements on library services. The profession's well-known and much used Output Measures for Public Libraries (Van House, et al., 1987) will need to be reinvented for public libraries in the networked environment.

## REACHING FOR THE FUTURE

Probably the single most important critical success factor for this project was the individual drive, motivation, attitude, and vision of the librarians. Indeed, participants were selected to participate in the project because of criteria that included their desire to be part of the project and their desire to experiment and try something new and exciting. Their excitement and vision were contagious when they met with others in the community, when they demonstrated their new knowledge, or when they learned new skills and ways of using the Internet.

The project clearly demonstrated that public librarians in a very rural setting with limited resources, when given a chance, could in fact get connected to the Internet, use a broad range of equipment and electronic services, develop new types of services to the community, and create a sense of excitement that came out of the library. Their sense of excitement and discovery translated into programs and applications that often put the public library at the foreground of technology application in the entire community. Indeed, many of the issues related to moving to the networked environment are similar to those being faced by other types of libraries (McClure et al., 1994).

President Clinton announced in his State of the Union Address of January 25, 1994, "we must work with the private sector to connect every classroom, every clinic, every library [and] every hospital in America into the national information superhighway by the year 2000" (Clinton, 1994, p. 1). In addition, the Information Infrastructure Task Force (IITF) Committee on Applications and Technology stated in a January 25, 1994, policy document (1994, p. 3) that libraries are one of seven major application areas for initial study. The report went on to say that:

> Providing equitable access is important for many of the applications areas considered. This issue includes access to other individuals and citizen groups via the NII as well as access to information.... For education and for libraries, all teachers and students in K-12 schools and all public libraries -- whether in urban suburban, or rural areas; whether in rich or in poor neighborhoods -- need access to the educational and library services carried on the NII. All commercial establishments and all workers must have equal access to the opportunities for electronic commerce and telecommuting provided by the NII. Finally, all citizens must have equal access to government services provided over the NII.

The findings offered earlier in this report offer a beginning perspective on the issues and barriers that must be resolved if public libraries are to participate effectively in accomplishing such goals.

How the electronic, networked public library evolves, how the private sector and public libraries can work together to realize the vision of President Clinton, and determine the Federal role in promoting the President's vision are critical concerns. A study currently sponsored by the National Commission of Libraries and Information Science (1993) may help to shed some light on such roles. The importance, however, of public access to electronic information in a networked environment cannot be underestimated as such access affects the very fabric of our society and life.

The networked public library is a future that public librarians must move toward. This future is one that offers the public library great opportunities to be an electronic community spokesperson and

"central hub" that links various community activities both with themselves and to the outside world. Indeed, linkages is what the network does best. Although we are only now beginning to explore how best to exploit the potential of electronic networking, the time is now for public libraries to move into this networked environment and, at the same time, move into the future!

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## APPENDICES


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# Appendix A

## Structured Interview: Candidate Libraries

*General guidelines: These questions are intended to provide a framework for gathering the information we need. As they are asked, it is probably as important to note "intangibles" such as tone of voice, general assessment of enthusiasm, etc, as it is to write down the explicit answers to the questions. Follow-up questions should be asked whenever doubt exists as to the meaning of an answer given.*

[*Sample Intro. Will need to be "tuned" to each case based on background.*]

Hello, my name is ----------. I am a research associate with NYSERNet. In mid-January, Jean Polly of NYSERNet sent you a letter describing a project to bring Internet connectivity to rural libraries. We are following up on that letter since you have expressed an interest in participating in this project. I'd like to ask you a few questions to get a better idea of what your library is like, and how well it might fit into the overall goals of our project.

This project is an experiment in bringing connectivity to rural libraries, and we are going to try to monitor closely how it goes, and publish a report on the results. We will be interviewing several libraries, and your individual responses will be kept confidential. (We might publish aggregated data, or use anonymous quotes.) Do you mind if we use the information we gather from you in this way? *[What do we do if they say "yes" to this question? Is it necessary to include the second paragraph at all at this point?]*

**Preliminary**

Would you or one of your staff be primarily responsible for implementing this project?

**1. Library and Community Demographics**

What was your total circulation in 1992?

How many hours per week are you open?

How many people are you chartered to serve?

How many registered patrons do you have?

**2. Information Needs**

Do you frequently get requests for information that you cannot meet locally?

If so, can you give me some examples?

Where do you or your patrons go to meet information needs that cannot be met locally?

What sorts of information would you like to have access to that you don't now?

3. **Planning and Evaluation**
Do you regularly engage in a planning process of any sort? Y N

If you do, could you briefly describe what you do and who is involved?

What methods do you use to evaluate the services you provide?

4. **Champion**
Have you read the materials Jean Polly sent you?

What is your assessment of them?

What else have you read about networking? [*Examples*]

What do you find most interesting about the Internet?

How many hours per week would you be willing to devote to making this project succeed?

__ 1-5 __ 5-10 __ more than 10 other _____

How much time do you think you would spend exploring the Internet?

Have you discussed this with any other staff members?

Please describe their level of interest.

5. **Commitment: Time, Staff, Money [Discuss with Jean]**
This service could be expensive, as much as $3000 per year.
How would you fund this once the grant period ends?
__Other grants __Library budget __Cheaper alternatives
__Collaboration with other local agencies __Other: _____

How much staff time do you think your library could devote to utilizing networked information?

How much time do you think you personally will devote to this project?

Would you be willing to write a short final report?

Would you be willing to keep a log (in a format we'll provide) of how you use your connection?

**6. Administrative Structure**
If you decide you want to participate in this project, who has to authorize it?
___ Library Director ___ Department Head ___ Library Board __ Other

We will be asking participating libraries to sign a contract which outlines NYSERNet's and the Test Sites' responsibilities. Who would sign this contract?

**7. Staff and Technology Base**
What kind of computers do you have in your library now, and how do you use them? [*Online services?*]

Who uses them?
[*Follow up depending on answer*]

How many people work in your library?
[*Follow up about volunteers*]

How many have MLS degrees?

**8. Phone Lines**
Will you be able to either have a separate phone line for this service, or set aside times when you can use your phone line for connection to the network rather than for regular phone calls?

**9. Locally-Generated Information**
Is any information produced locally that you might make available over the network?

Can you give me some examples?
[Newsletters, local government information, schedules, ...]

**10. Other Reasons**
Is there anything you would like to add? Are there other reasons we should include you in this program?

**11. Do you have any questions for us?** ***[Keep careful track of any questions.]***

**12. Thank you for your time.**

# Appendix B

Please fill this out today. The purpose of this document is to help us develop the training program you will be attending June 14. Each attendee from your site should fill out a copy of this survey and mail or fax back promptly. Your answers will help ensure that we cover areas of interest to you. Please return the completed survey to:

Jean Armour Polly--Project GAIN
NYSERNet, Inc.
Suite 103
200 Elwood Davis Rd.
Liverpool, NY 13088-6147
Voice: 315.453.2912 Fax: 315.453.3052

1. Your Name: _____

2. Your Title: _____

3. Library/Site name and Phone Number: _____

4. Have you ever used a Personal Computer? Yes No

5. What kind(s) of Personal Computer have you used (circle all that apply)?

   IBM/DOS Macintosh/Apple Other:

6. How comfortable are you with using a computer (circle one)?

   Very Not at All
   1 2 3 4 5

7. How experienced are you with using a computer (circle one)?

   Very Not at All
   1 2 3 4 5

8. If you use a computer, what do you use it for (circle all that apply)?

   Spreadsheet Database Word Processing

   Games Other:

9. Please list the names of the software that you know how to use, if any:

10. Have you ever used a mouse? Yes No

11. Have you ever used a modem? Yes No

12. What can we do to make this training session the most effective for you?

13. Please share any other thoughts or comments you have which will help us develop this training session to best suit your needs:

Thank you for taking the time to complete this survey!

# Appendix C

# Global Access Information Network Baseline Survey

**Please take a few minutes of your time to complete this survey. This is an important part of your participation in this project, and is a necessary part of the evaluation process. All staff and volunteers who will be involved in implementing this project should fill out a copy of this questionnaire. Please return this survey to NYSERNet by May 27, 1993.**

Return to: Jean Armour Polly, NYSERNet, Inc., Suite 103, 200 Elwood Davis Rd, Liverpool, NY, 13088-6147.
If you have any questions, call Jean, at 315-453-2912 (ext. 224), or Wally (ext. 231).

## Part I. About You and Your Institution

For each of your answers, please mark the box that most closely fits your answer.

1. Your Name:_____

2. Job Title or Position:_____

3. Name of Institution:_____

4. Population served by your organization is:_____

## Part II. Background Information

5. How much of the following kinds of support do you think you will need per month to use your network connection successfully?

| | None | Less than 5 hrs. | 5 to 10 hrs. | 10 hrs. or more |
|---|---|---|---|---|
| Technical support related to hardware | [ ] | [ ] | [ ] | [ ] |
| Technical support related to software | [ ] | [ ] | [ ] | [ ] |
| Instruction other than formal training | [ ] | [ ] | [ ] | [ ] |
| instructions in using information resources | [ ] | [ ] | [ ] | [ ] |
| Info. about what networks can be used | [ ] | [ ] | [ ] | [ ] |

Others, please specify: _____

6. How many hours of training do you think you will need to successfully use your network connection?
   - [ ] 0 - 5
   - [ ] 5 - 10
   - [ ] 10 - 20
   - [ ] More than 20
   - [ ] Other, please specify: _____

7. To what degree have you had experience in using the following networking activities?

| | None | Less than 5 hrs. | 5 to 10 hrs. | 10 hrs. or more |
|---|---|---|---|---|
| Information Retrieval | [ ] | [ ] | [ ] | [ ] |
| File Transfer | [ ] | [ ] | [ ] | [ ] |
| Electronic Mail | [ ] | [ ] | [ ] | [ ] |
| Telnet/Remote Login | [ ] | [ ] | [ ] | [ ] |
| Listservs, BBS, Computer Forums | [ ] | [ ] | [ ] | [ ] |

Others, please specify: _____

8. To what degree have you had experience in using a computer to do the following?

| | None | Less than 5 hrs. | 5 to 10 hrs. | 10 hrs. or more |
|---|---|---|---|---|
| Spreadsheets | [ ] | [ ] | [ ] | [ ] |
| Word Processing | [ ] | [ ] | [ ] | [ ] |
| Database Management | [ ] | [ ] | [ ] | [ ] |
| Graphics | [ ] | [ ] | [ ] | [ ] |
| Desktop Publishing | [ ] | [ ] | [ ] | [ ] |
| Games | [ ] | [ ] | [ ] | [ ] |

Others, please specify: _____

9. Please rank these **user groups** in terms of the ones you think **most likely (1)** to benefit from your network connection, to those **least likely (7)** to benefit from the connection:

[ ] K-12 Students
[ ] College Students
[ ] Continuing Education Students
[ ] Business People
[ ] General Public
[ ] Library Staff
[ ] Other, please specify: _____

10. Please explain briefly why you ranked these groups as you did:

11. Please rank these **library areas** in terms of the ones you think **most likely (1)** to benefit from your network connection, to those **least likely (7)** to benefit from the connection:

[ ] Reference
[ ] Provision of Full-text Resources
[ ] Special Programs
[ ] Provision of Computer Software
[ ] Interlibrary Loan
[ ] Staff Development
[ ] Other, please specify: _____

12. Please explain briefly why you ranked these areas as you did:

13. In addition to formal training, how many hours do you think you will have to spend learning to use your network connection?

[ ] 0 - 5
[ ] 5 - 10
[ ] 10 - 20
[ ] More than 20
[ ] Other, please specify: _____

# Part III. Issues Assessment

| | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree | Don't Know |
|---|---|---|---|---|---|---|
| 14. The main benefit of network access will be the speed with which I can obtain information. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 15. The main benefit of network access will be the new kinds of information available. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 16. Use of the network will help me learn about what other librarians are doing. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 17. Use of network mail will help foster connections between my library and other libraries. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 18. Use of network mail will help foster collaborations between my community and other communities. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 19. Networked information will never be as useful as library holdings. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 20. Networked information will become a key resource for my patrons. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 21. Staff members in my library are enthusiastic about using the network. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 22. Libraries should provide facilities so that the public can access the network. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 23. Libraries should provide free public access to network resources. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 24. Librarians should provide training for patrons about using the network. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 25. The network will be used by patrons without librarians' assistance. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 26. The network will be used primarily by librarians to assist patrons. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| 27. Libraries should charge patrons for accessing network resources. | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |

28. I believe that having our library connected to the network will (circle one choice):

| Positively Impact My Library | | | | Have No Impact on My Library |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

29. I believe that having our library connected to the network will (circle one choice):

| Positively Impact My Community | | | | Have No Impact on My Community |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

30. How much do you think an Internet connection for a library of your size would cost [technical connection as well as other resource support by the library] per year? (If you have no idea, make a wild guess.) _____

# IV. Likely Impacts

31. What **Impacts** on the **library** do you anticipate by having a network connection? (e.g., staffing, budget allocation, collection development, community use, etc.)

32. What **Impacts** on **library services and programs** do you anticipate by having a network connection? (e.g., reference, interlibrary loan, audio-visual, etc.)

33. What **impacts** on the **local community** and **individual community members** do you anticipate by providing networked information services? (social, economic, educational, information needs, etc.)

34. At the end of your library's participation in this project, how will you determine if it was successful?

35. What do you think might be the largest obstacle standing in the way of successful implementation of this project at your institution?

36. As a participant in this project, what do you most hope will happen as a result of bringing Internet connectivity into your library and community?

Appendix D

# Project GAIN June 14 Training Evaluation Form

Please take a few minutes of your time to fill out this questionnaire. We want to know whether we met your and our goals for this training, and how we can do it better next time. Thanks.

1. The three most important goals I had for this training were:

a. _____

b. _____

c. _____

2. My goals for this training were:

| Not met at all | | | | More than met |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

3. The pace of this training was:

| Much too slow | | Just Right | | Much too fast |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

4. The clarity with which ideas were presented was:

| Not at all clear | | | | Very Clear |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

5. How much of an opportunity did you have to ask questions?

| No opportunity | | | | Plenty of opportunity |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

6. Overall, the trainers were:

| Poor Presenters | | | | Excellent Presenters |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

7. The agenda for this training:

| Didn't cover enough | | | | Tried to cover too much |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

(If you have ideas as to what areas should have been left out or included, please note them here:

8. I feel I had a chance to get to know the other participants in this project:

| Disagree | | | | Agree |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

9. I feel like I now have a good basic understanding of how the Internet works:

| Strongly Disagree | | | | Strongly Agree |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

10. At the beginning of the day, the degree to which I understood the following network tools was:

| | Not At All | | | | A Great Deal |
|---|---|---|---|---|---|
| SLIP | 1 | 2 | 3 | 4 | 5 |
| Telnet | 1 | 2 | 3 | 4 | 5 |
| FTP | 1 | 2 | 3 | 4 | 5 |
| Email | 1 | 2 | 3 | 4 | 5 |
| Gopher | 1 | 2 | 3 | 4 | 5 |
| WAIS | 1 | 2 | 3 | 4 | 5 |
| OCLC | 1 | 2 | 3 | 4 | 5 |

11. At the end of the day, the degree to which I understand the following network tools is:

| | Not At All | | | | A Great Deal |
|---|---|---|---|---|---|
| SLIP | 1 | 2 | 3 | 4 | 5 |
| Telnet | 1 | 2 | 3 | 4 | 5 |
| FTP | 1 | 2 | 3 | 4 | 5 |
| Email | 1 | 2 | 3 | 4 | 5 |
| Gopher | 1 | 2 | 3 | 4 | 5 |
| WAIS | 1 | 2 | 3 | 4 | 5 |
| OCLC | 1 | 2 | 3 | 4 | 5 |

12. The degree to which I can now go back to my site and utilize the following network tools is:

| | Not Much | | | | Quite a Bit |
|---|---|---|---|---|---|
| SLIP | 1 | 2 | 3 | 4 | 5 |
| Telnet | 1 | 2 | 3 | 4 | 5 |
| FTP | 1 | 2 | 3 | 4 | 5 |
| Email | 1 | 2 | 3 | 4 | 5 |
| Gopher | 1 | 2 | 3 | 4 | 5 |
| WAIS | 1 | 2 | 3 | 4 | 5 |
| OCLC | 1 | 2 | 3 | 4 | 5 |

13. Estimate the degree of difficulty you will have in setting up the hardware for this project when you return home:

Very Difficult 1 2 3 4 5 Very Easy

14. How well do you understand how Internet-accessible resources can be useful in a rural library context?

Don't understand at all 1 2 3 4 5 Understand very clearly

15. How would you rate your library's interest in this project ?

Very Limited Interest 1 2 3 4 5 A Great Deal of Interest

16. Please write the numbers 1 through 4 in the following spaces, indicating how you would prefer that we do follow-up training (1=Most Important, 4=Least Important):

[ ] At your library during a site visit [ ] In another group session here at NYSERNet
[ ] On-line over the Internet
[ ] Other (specify) _____

17. Please share any other ideas you might have as to how we can do this better next time:

# Appendix E

## Network Activity Log: Project GAIN

Library: _____

| Initials of User | Date | Internet Applications | (Internet) Address | Time Spent | Type of Info. Sought | Find What You Sought? | Usefulness of Resource Obtained | Problems Encountered | Other Comments |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

# Appendix F

## Project GAIN: NYSERNet Support Log

| Date | Site | Site Contact | NYSERNet Contact | Time Spent | Description of Info Need | Diagnosis of Info Need | Need Met | If Need Met, How? If Not, What Next? |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

# Appendix G
# SITE VISITS

## I. Introduction

From the initial design of Project GAIN, site visits were considered essential for several reasons. First, we knew that follow-up training would be necessary, given that the participants received only one day of initial training. Second, we thought it would be important to check out the hardware and software used for the project and do any "fine tuning" that was necessary. Third, we suspected that a site visit would be useful in building morale among the participants at each site. Finally, we thought that a site visit would be an opportunity to gather data useful in the evaluation component of the project. Our experience with the site visits indicates that they were valuable for all of the purposes outlined above.

## II. Rationale and Methodology

Rationale

Since we took a user-based approach to this study, determining the needs and backgrounds of the participants was of paramount importance. While surveys formed an essential part of our data gathering, there are elusive elements to a users' perspective that are difficult to capture in the highly structured format of a questionnaire. In a site visit, the researcher encountered users on their "turf," rather than remotely administering surveys or bringing the participants to a "foreign" location. This facilitated gathering data more pertinent to the users' needs and situations than would be possible outside that context.

Methodology

As part of the preparation for each site visit, the principal contact at each site was asked to invite a cross-section of participants in the project, both staff and members of the Users Group, to a 1 1/2 hour discussion meeting. These discussions usually took place in the morning, before any follow-up training was done.

The discussion section of our site visits was an open-ended forum where the users had the opportunity to raise issues that were important to them, with a modest amount of direction and questioning on the part of the researcher.

Prior to the first site visit, the research team had prepared a list of questions based on our variables (see below). The hope was that data could be gathered on each variable without reducing the discussion to a simple question and answer session. Moreover, a basic framework for gathering and reporting the data was created, with the following sections:

- General Comments
- Issues and Questions
- Ideas and Recommendations
- Overall Assessment.

## III. Conclusions

Site visits are a very useful part of implementing a rural networking project, and the evaluation team recommends that they be integrated into similar projects whenever possible. They give an insight into what is going on at the various sites that would be impossible without them. They allow for the fine tuning of equipment and software, permit further training, provide early warning of possible problems, and allow for the gathering of data in the users' context. Moreover, the very fact that someone from the sponsoring organization has gone to the trouble to pay a visit is in itself a valuable morale booster.

Enough planning should go into the site visits so that both researchers and participants are clear as to who will be attending and what the purpose and agenda are. In cases where this clarity was lacking, site visits were less successful. It would also be useful for a team of at least two researchers to conduct the site visits. In this study, only one researcher conducted the site visits, due to staffing limitations. The lack of a second researcher's perspective on what transpired limited the richness of the data gathered.

## IV. Site Visit Plan

Rough Agenda
10-11 am: Arrive at site, get tour of site and introductions to all staff, discuss plan for day/issues with principal contact
11-12:30 pm: Discussion meeting with staff/members of user group involved in implementation
12:30-2 pm: Lunch/informal discussion with subset of participants
2-4:15 pm: Training session
4:15-5 pm: Final group discussion of issues that have emerged over the day
5-5:30 pm: Individual wrap-up discussion with principal contact person
5:30-7:00 pm: First cut at writing up impressions
7-8 pm: Dinner
8- : Drive home

Note: This agenda was intended to be flexible and provide only a rough framework which would need to be "tuned" for each site.

Key Questions/Areas of Interest

1. Support: Do the sites feel they are getting enough support? How do they assess its quality? Do they have suggestions for how it could be improved? What do they think NYSERNet should provide in terms of support? What does "support" mean to them? Hardware, basic communication software, Internet applications and navigation tools, other software, guidance in available network-based resources, programming, the goals of Project GAIN...?

2. Training: After trying to use the networks for a few weeks after the training, how do people at the sites assess the quality of training they received? Do they have suggestions for improving the training based on their experience after returning to the sites and actually trying to use the equipment? What sort of further training do they think they need? What sorts of delivery mechanisms would be appropriate?

3. Network Knowledge: How comfortable are people with using network tools and resources? Which tools do they have the best facility with, and which the least? What resources are they utilizing, and for what purposes? Which are they not utilizing that they might be? What can be done to enhance the effectiveness and utility of their use of networked resources?

4. Computer Knowledge: How comfortable are people at the sites with the basic hardware and Macintosh operating system? What about Claris Works and the various utility programs? If they are having problems, what can be done to overcome them?

5. Costs: What "costs" are the sites incurring? Are other services being cut back? Does staff feel stressed by trying to implement networking on top of their other tasks? Is the project cutting into people's leisure time/home life? Are telecommunications costs more than expected? How would they put a dollar figure on the "costs" they are incurring from being involved in this project? Do the rewards gained from using the connection justify the time spent doing so? Has the arrival of this new technology caused any disruptions in the organization of the library? If so, how are they being dealt with?

6. Benefits: What benefits have people at the sites seen so far? How would they define a "benefit"? Who has benefited (individuals, groups/types of users)? Do they have any ideas on how to increase the level of benefits experienced by patrons and staff ?

7. Effort: How much time and energy are people expending in learning about and using their connection? How much energy are they expending in learning the Macintosh operating system and hardware, as opposed to dealing with navigating the Internet? Are they frustrated at the level of effort required, or do they accept it as necessary and worth it? What could be done to reduce the level of effort necessary?

8. Usefulness: Do people at the sites feel the connection is useful? How? To what practical ends are they putting their connection? Are different people/groups using

the connection in different ways? Why? Is usefulness confined to individuals, or is the connection being integrated into library programs? How can the connection be made more useful at this site?

9. Enthusiasm: How enthusiastic are people at the site about the connection? Do enthusiasm levels differ among different individuals/groups? Are there any indications as to why this is the case? What can be done to engender more enthusiasm? Is there enthusiastic support from the top administration (director/principal) of the site?

10. Roles: What roles do various individuals/groups play in the use of the network connection? Where do users/patrons fit in? What role do professionals view themselves as playing in the intersection of users and networked information?

11. Programming: What role does the connection play in the programs of the library? What effort is the site making to develop programs that utilize their connection? Has the library organized a user group, as we requested? What kinds of library services that utilize the networks are library staff planning and implementing?

12. Evaluation: How will each site determine if the services they provide by utilizing their network connection are successful or have an impact on the library and/or community? Do they assume that since NYSERNet is doing an evaluation that they don't need to?

# Appendix H

## Project GAIN On-Site Training Evaluation Form

Please take a few minutes of your time to fill out this questionnaire. We want to know whether we met your and our goals for this training, and how we can do it better next time. Thanks.

Site: _____ Date: _____

1. The three most important goals I had for this training were:

a. _____

b. _____

c. _____

2. My goals for this training were:

| Not met at all | | | | More than met |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

3. The pace of this training was:

| Much too slow | | Just Right | | Much too fast |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

4. The clarity with which ideas were presented was:

| Not at all clear | | | | Very Clear |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

5. How much of an opportunity did you have to ask questions?

| No opportunity | | | | Plenty of opportunity |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

6. Overall, the trainers were:

| Poor Presenters | | | | Excellent Presenters |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

7. The agenda for this training:

| Didn't cover enough | | | | Tried to cover too much |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

If you have ideas as to what areas should have been left out or included, please note them here:

8. I feel I had a chance to get to know the other participants in this project:

| Disagree | | | | Agree |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

9. I feel like I now have a good basic understanding of how the Internet works:

| Strongly Disagree | | | | Strongly Agree |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

10. At the beginning of this training, the degree to which I **understood** the following network tools was:

| | Not At All | | | | A Great Deal |
|---|---|---|---|---|---|
| SLIP | 1 | 2 | 3 | 4 | 5 |
| Telnet | 1 | 2 | 3 | 4 | 5 |
| FTP | 1 | 2 | 3 | 4 | 5 |
| Email | 1 | 2 | 3 | 4 | 5 |
| Gopher | 1 | 2 | 3 | 4 | 5 |
| WAIS | 1 | 2 | 3 | 4 | 5 |
| OCLC | 1 | 2 | 3 | 4 | 5 |

11. At the end of this training, the degree to which I **understand** the following network tools is:

| | Not At All | | | | A Great Deal |
|---|---|---|---|---|---|
| SLIP | 1 | 2 | 3 | 4 | 5 |
| Telnet | 1 | 2 | 3 | 4 | 5 |
| FTP | 1 | 2 | 3 | 4 | 5 |
| Email | 1 | 2 | 3 | 4 | 5 |
| Gopher | 1 | 2 | 3 | 4 | 5 |
| WAIS | 1 | 2 | 3 | 4 | 5 |
| OCLC | 1 | 2 | 3 | 4 | 5 |

12. The degree to which I can now **utilize** the following network tools is:

| | Not Much | | | | Quite a Bit |
|---|---|---|---|---|---|
| SLIP | 1 | 2 | 3 | 4 | 5 |
| Telnet | 1 | 2 | 3 | 4 | 5 |
| FTP | 1 | 2 | 3 | 4 | 5 |
| Email | 1 | 2 | 3 | 4 | 5 |
| Gopher | 1 | 2 | 3 | 4 | 5 |
| WAIS | 1 | 2 | 3 | 4 | 5 |
| OCLC | 1 | 2 | 3 | 4 | 5 |

13. Estimate the degree of difficulty you have had in setting up and maintaining the hardware for this project:

Very Difficult 1 2 3 4 5 Very Easy

14. How well do you understand how Internet-accessible resources can be useful in a rural library/school context?

Don't understand at all 1 2 3 4 5 Understand very clearly

15. How would you rate your library/school's interest in this project ?

Very Limited Interest 1 2 3 4 5 A Great Deal of Interest

16. Please write the numbers 1 through 4 in the following spaces, indicating how you would prefer that we do further follow-up training (1=Most Important, 4=Least Important):

[ ] At your library during a site visit [ ] In another group session at NYSERNet's office
[ ] On-line over the Internet
[ ] Other (specify) _____

17. Please share any other ideas you might have as to how we can do this better next time:

Appendix I

# Global Access Information Network Endpoint Survey

## Part I. About You and Your Site

1. Your Name:_____
2. Name of Site:_____
3. Please indicate whether you are a member of the library staff [ ] or a member of the community [ ].
4. If a member of the library staff, please list your job title/position:_____.
5. How would you assess your knowledge and skills regarding the Internet?

   [ ] None [ ] Beginner [ ] Intermediate [ ] Advanced

6. How would you assess your knowledge and skills regarding Macintosh computers?

   [ ] None [ ] Beginner [ ] Intermediate [ ] Advanced

## Part II. Uses and Activities Assessment

7. Please assess the overall success of this project so far.

   [ ] Extremely Successful [ ] Successful [ ] Somewhat Successful [ ] Unsuccessful

Please comment if you wish.

8. In general, how would you describe your site's current level of interest and enthusiasm for this project?

   [ ] Extremely Enthusiastic [ ] Enthusiastic [ ] Somewhat Enthusiastic [ ] Unenthusiastic

Please comment if you wish.

9. In particular, how would you describe the current level of interest and enthusiasm for this project on the part of the library's upper management?

[ ] Extremely Enthusiastic [ ] Enthusiastic [ ] Somewhat Enthusiastic [ ] Unenthusiastic

Please comment if you wish.

10. On average, how many hours per week is spent on this project by:

You as an individual _____ The site as a whole _____

11. What means, if any, has the library used to publicize and promote the Internet connection in the community?

12. Please rank these **user groups** on a scale from 1 - 7, from who you think **has up to this point** and **will in the future** benefit the most from your network connection (1) to who you think **has up to this point** and **will in the future** benefit the least from the connection (7). Please use each number once and only once in each column.

| | Has up to this point | Will in the future |
|---|---|---|
| K-12 Students | [ ] | [ ] |
| College Students | [ ] | [ ] |
| Continuing Education Students | [ ] | [ ] |
| Business People | [ ] | [ ] |
| General Public | [ ] | [ ] |
| Library Staff | [ ] | [ ] |
| Other, please specify | [ ] _____ | [ ] _____ |

Please explain why you ranked these groups as you did:

13. Please rank these **library areas** on a scale from 1 - 7, from the one you think **has up to this point** and **will in the future** benefit the most from your network connection (1) to the one you think **has up to this point** and **will in the future** benefit the least from the connection (7). Please use each number once and only once in each column.

| | Has up to this point | Will in the future |
|---|---|---|
| Reference | [ ] | [ ] |
| Provision of Full-text Resources | [ ] | [ ] |
| Special Programs | [ ] | [ ] |
| Provision of Computer Software | [ ] | [ ] |
| Interlibrary Loan | [ ] | [ ] |
| Staff Development | [ ] | [ ] |
| Other, please specify | [ ] _____ | [ ] _____ |

Please explain why you ranked these areas as you did:

14. What network resources and services did you find most useful and why? (e.g., email, listservs/Usenet, online catalogs, various databases and files, freeware and shareware software, commercial services, etc.)

15. What resources or services has your site offered the broader Internet community?

16. What network navigation tools did you find most useful and why? (e.g., Gopher/Veronica, WAIS, Archie, Eudora, Mosaic/World Wide Web, Fetch)

17. Please give an overall rating to both the quality and quantity of training you received from NYSERNet. (Some areas to consider: hardware, all types of software, network navigation tools, resources available on the network, commercial services, guidance on how to integrate the connection into programs and services, etc.)

Quality [ ] More Than Adequate [ ] Adequate [ ] Somewhat Adequate [ ] Inadequate

Quantity [ ] More Than Adequate [ ] Adequate [ ] Somewhat Adequate [ ] Inadequate

Please comment and offer suggestions for improvement. In what areas did you need more? How often? What training modes were or would have been most effective? (e.g., off-site group training, site visits, over the network, user manuals, step by step instruction sheets, etc.)

18. Please give an overall rating to the support you received (defined as technical advice and problem solving provided by NYSERNet staff).

[ ] More Than Adequate [ ] Adequate [ ] Somewhat Adequate [ ] Inadequate

Please comment and offer suggestions for improvement.

# Part III. Issues Assessment

| | Strongly Agree | Agree | Don't Know | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| 19. A main benefit of network access is the speed with which I can obtain information. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 20. A main benefit of network access is the new kinds of information available. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 21. Use of the network helps me learn about what other librarians are doing. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 22. Use of network mail helps foster connections between my library and other libraries. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 23. Use of network mail helps foster collaborations between my community and other communities. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 24. Networked information is not as useful as library holdings. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 25. Networked information has become a key resource for my patrons. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 26. Staff members in my library are enthusiastic about using the network. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 27. Libraries should provide facilities so that the public can access the network. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 28. Libraries should provide free public access to network resources. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 29. Librarians should provide training for patrons about using the network. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 30. The network should be used by patrons without librarians' assistance. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 31. The network should be used primarily by librarians to assist patrons. | [ ] | [ ] | [ ] | [ ] | [ ] |
| 32. Libraries should charge patrons for accessing network resources. | [ ] | [ ] | [ ] | [ ] | [ ] |

33. I believe that having our library connected to the network has (circle one choice):

| Positively Impacted My Library | | | | Had No Impact on My Library |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

34. I believe that having our library connected to the network has (circle one choice):

| Positively Impacted My Community | | | | Had No Impact on My Community |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

# IV. Impact Assessment

**IMPORTANT: In the questions below, the material in parentheses is intended only to prompt ideas and offer suggestions. Please feel free to consider other areas of interest to you.**

35. What impacts **on the library, its services, and programs** have occurred as a result of its participation in this project? List as many as you like, but please list at least three. (e.g., staff, budget allocation, collection development, community use, reference, interlibrary loan, etc.)

36. What impacts **on the local community and individual community members** have occurred as a result of the library's participation in this project? List as many as you like, but please list at least three. (e.g., quality of life, social, economic, education, etc.)

37. What have you or your site been able to do that would not have been possible without the Internet connection?

38. Please give any examples that indicate your network connection might transform the role and status of the library in any way.

39. How do you think an Internet connection can be particularly beneficial to rural libraries and communities? What Internet services and resources and for what purposes?

40. What factors are critical to successfully integrating network connectivity into the provision of rural libraries' services?

41. What types of costs (both monetary and non-monetary) do you think your site is incurring as a result of participating in this project?

42. What do you think have been the most significant obstacles standing in the way of successful network utilization at your site?

43. Taking into account all of the costs and effort (both monetary and non-monetary) and all of the benefits:

Has the connection been "worth it" so far? Please comment.

Do you perceive enough potential value to justify maintaining the service after the grant period has ended? Please comment.

How much would the library be willing to spend, per year, to maintain the service?

44. Overall, what suggestions do you have or changes do you recommend for someone trying to replicate this project? What should NYSERNet have done differently? What should you have done differently?

45. Have we left anything out? Is there anything more you'd like to tell us? Please feel free to comment in the space below and/or add additional pages.

# Appendix J

Dr. McClure

Nov 29, 1993

## PROJECT GAIN FOCUS GROUP DISCUSSION TOPICS

### Morning Session

1. Describe the impacts from the GAIN project on your library, the community, and individuals -- please be as specific as possible.

2. What changes were made, or did you have to make, in library or personal activities to participate effectively in project GAIN?

3. What barriers inhibited your use of the Internet and your overall success in the project?

4. How has the library's role, status, or visibility in the community changed as a result of its participation in the project? What tangible evidence can you offer to support your answer?

5. What were the most important Internet resources or tools that you used and how much would you be willing to pay per month to have commercial tools of you choice available?

6. Can you describe successful collaboration efforts that occurred between the library and other groups within your community as a result of participating in the project?

7. What segments of the community were most receptive to the Internet applications? Is there a general "model" of the type of person who was most receptive to using Internet and Internet-based services?

8. What are the most important "critical success factors" that must be present in the library for it successful transition to the Internet environment?

### Afternoon Session

1. What Internet-based programs are you developing or have you developed, for what specific audiences do you intend to target these programs?

2. Do you have local information resources or services that you intend to make available over the Internet?

3. What steps will you take to continue project activities, Internet programs, learning about the Internet, etc.

4. How do you expect to financially support your future Internet involvement?

# Appendix K

## PARTICIPANT INFORMATION FORM
Project GAIN Focus Group Session, November 29, 1993

1. Library Affiliation:

2. Your position in library [or occupation if not a librarian]:

3. Number of years of association with this library:

4. Describe, specifically, your activities/responsibilities related to project GAIN:

5. Number of years of computing experience:

6. Overall, I would assess the success of Project Gain in my library as:

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Unsuccessful | | | Somewhat Successful | | | Exceedingly Successful |

7. What is the <u>one word or phrase</u> that comes to your mind when you think of your involvement in Project Gain?

8. What is the <u>one piece of advice</u> you would give a public librarian who is just starting to get connected to the Internet and who wants to develop Internet programs and services for his/her community?

TOWN OF WEBB SCHOOLS
Main Street, P.O. Box 38
Old Forge, New York 13420

(315) 369-3222

Telefax: (315) 369-6216

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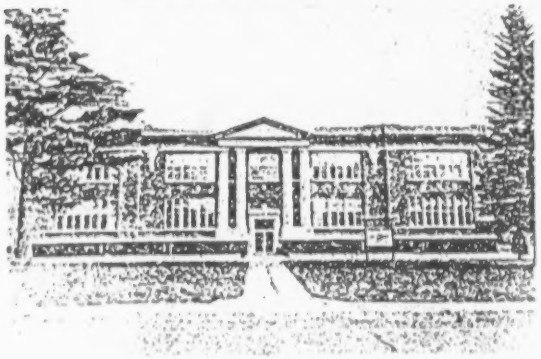

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November 12, 1993

Dear Mrs. Worthen,

We write to thank you for the efforts you and your staff made during last week's field trip by the Clash of Issues class. As you know our school has often encouraged students to make full use of the resources your library offers. However, it rarely takes class time to do so. The addition of Internet to your services convinced us that we should show students the wide variety of information that is now available to them. With your help the field trip was a great success and the Clash of Issues class was very impressed with the thirty-two pages of information it gained through Internet. For the first time in history our students are no longer hampered by travel and time constraints in their search for information. It is amazing that we now have data at our fingertips from sources that were not available even to urban students.

This electronics highway adds a new dimension to the intellectual life of our students and our school. We are fortunate to be on the cutting edge of change in how to use and manipulate information. We plan to expand the use of this service during the coming school year. Our goal is to provide students with research skills that are the equal of any student in the country.

It is our hope that we can continue to make full use of the town library and that you can continue to offer us the use of Internet. If there is anything we can do at school to help you continue in your efforts to maintain the program, please let us know.

Internet provides one more incentive for our students to use the library to its fullest potential.

Thank you,

Carl J. Klossner
Carl Klossner
Principal, K-12

Patrick Ferrick
Patrick Ferrick
Science Chairperson

William J. Kinney
William Kinney
Social Studies Chairperson

# Appendix M

**Morrisville1,11:07 PM 9/15/93...,literacy-adult learner seeks discussion or LIST 1**

Received: by nysernet.ORG (5.65/3.1.090690-NYSERnet Inc.) id AA16312; Thu, 16 Sep 93 00:03:37 -0400
Date: Wed, 15 Sep 1993 23:07:34 -0400 (EDT)
From: Morrisville1 <mville1@nysernet.ORG>
Subject: literacy-adult learner seeks discussion or LIST
To: PUBLIB@nysernet.ORG
Cc: wally@nysernet.ORG
Message-Id: <Pine.3.02.9309152334.B14036-b100000@nysernet.org>
Mime-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi. My name is Glenn. I am an adult learner through Literacy Volunteers. I have been with my tutor for 4 years. I am looking for someone who is also learning to read so we can communicate with each other.

I am 51 years old. I am a self-employed farmer. I am also a stock car fanatic and driver.

Sincerely, Glenn

NOTE: Glenn is accessing the Internet courtesy of the Morrisville Libray and Project GAIN, sponsored by NYSERNet, Apple computer, the Kaplan Foundation and OCLC (among others).

We were wondering if there was a LISTSERV or discussion group for new adult learners of reading to talk with one another over this remarkable resource. Often literacy students are isolated and (like many of us librarians) need someone to practice their skills with and bounce ideas off of. It also helps (as we know) to talk to someone who is in a similar situation as ourselves. If you know of any such Lists or discussion groups or know of an individual who would like to correspond with Glenn by email, please respond to us personally at the above address.

If no such LIST or group exists, we would be interested in finding out if there is enough interest to start one. Glenn and I would be interested in doing so.

Thanks,

Beverly Choltco-Devlin
Director, Morrisville Public Library
87 East Main Street
Morrisville, NY 13310

mville1@nysernet.org

# Appendix N

## LEARNER Mission Statement

LEARNER is a moderated literacy listserv intended to encourage adult new learners to practice their newly learned reading and writing skills and to meet other people who are making the exciting journey of learning to read. The sharing of ideas, helpful tips and concerns are all fine ways to use this group. LEARNER is also a great way to make new friends by setting up individual pen-pal contacts. Tutors or teachers are encouraged to help their learners use this list and to assist their students in making such contacts. When you seek pen-pal contacts by posting to LEARNER, it might be wise to introduce yourself by including your reading level (for example, just starting, reading for two years, etc.) and, most importantly, a little bit about yourself (your personal interests, hobbies etc.).

This list, however, is not the appropriate forum for the general discussion of literacy issues by those who are not learners. Those who wish to take part in such discussions are encouraged to subscribe to the list LITERACY which was formed to meet that need.

NOTE: If you are an experienced adult reader and would like to correspond with a new reader (as a type of mentor), please feel free to use this forum (LEARNER) to set up a personal pen-pal contact, also.

It is hoped that the spirit which moves people to be concerned about literacy will carry over to this list. Personal attacks on individuals will not be tolerated, and discussions about various literacy organizations should be conducted in a constructive way.

A note to tutors/teachers: As many of you are new to listservs yourselves, you may have questions about the instructions which follow. Please do not hesitate to send me an email message with any questions you may have. From my own experience as a tutor, this experience will probably be a learning one for you as well as your learner.

LEARNER is moderated by:

Beverly Choltco-Devlin
mville3@nysernet.org
Morrisville Public Library
87 E. Main Street
Box 37
Morrisville, NY 13408

Phone: 315-684-9130
Fax: 315-684-7007

# Appendix O

## LITERACY Mission Statement

LITERACY is a moderated general listserv for those individuals concerned with the issues of literacy. It is hoped that LITERACY will foster discussion by those involved in teaching adults to read and write. It is also open to anyone who is interested in the topic of literacy in general. The sharing of ideas, tips, helpful resources, teaching tools and personal experiences are all to be encouraged. The primary focus of the list is the fostering of literacy in those adults for whom English is their native language, but who, for any number of reasons, never learned to read or write. It is acknowledged that the learning of English as a second language is also considered a literacy issue, but the specific concerns of that issue are beyond the scope of this list. A separate list (TESLIT_L) exists for such discussion, and you are encouraged to participate in that forum. Of course, any "general" literacy discussion issues which happen to arise from the teaching of English as a second language are welcome here.

It should be noted that this list is not the appropriate forum for correspondence between learners or the development of pen-pal contacts. A separate list (LEARNER) has been formed to meet those needs, and adult learners and their tutors are encouraged to subscribe to and participate in that forum.

It is hoped that the spirit which moves people to be concerned about literacy will carry over to this list. Personal attacks on individuals will not be tolerated and discussions about various literacy organizations and methods for instruction should be conducted in a constructive way.

LITERACY is moderated by:

Beverly Cholteo-Devlin
mville3@nysernet.org
Morrisville Public Library
87 E. Main Street
Box 37
Morrisville, NY 13408

Phone: 315-684-9130
Fax: 315-684-7007

# Project GAIN -- Cooperative Agreement

This agreement, made and entered into this _____ day of _____ 1993, by and between _____ (hereinafter "Test Site"), and the New York State Research and Educational Network (hereinafter "NYSERNet").

WHEREAS, NYSERNet has established within its organization Project GAIN, an effort to provide access to, and evaluate the impact of networked information resources on rural communities; and

WHEREAS, during the pilot period for Project GAIN, NYSERNet has determined the need for certain test sites from which information will be obtained to help the Project team to refine and improve the GAIN prototype; and

WHEREAS, the Test Site has expressed its willingness to participate in the evaluation by providing a test site for an evaluation period.

NOW THEREFORE, in consideration of the above and the promises hereinafter made, the parties hereto mutually agree as follows:

I. Performance By NYSERNet

A. To facilitate the test, NYSERNet agrees to loan, during the evaluation period and at no cost to the site, computer software required to access networked information resources, including:

1. Versatilities or MacSLIP software
2. POPMail, TurboGopher, Fetch and other net tools.
3. ClarisWorks or other integrated software package.
4. Other software which may become available.

B. To facilitate the test, NYSERNet agrees to arrange for HOST-DIAL accounts for each site, during the test period and at no cost to the site.

C. To facilitate the test, NYSERNet agrees to loan, during the evaluation period and at no cost to the site, computer hardware required to access networked information resources, including:

1. Macintosh Color Classic computer including 4 MB RAM, 80 MB hard drive , and external CD ROM drive.
2. LaserWriter Select 300 laser printer.
3. 9600 baud fax modem
4. Requisite cabling and system configuration.

D. Most sites will make only local calls to access the network. To sites which must incur long-distance telecommunications costs, NYSERNet will make a lump-sum grant in the amount of _____ at the beginning of the test period. This money is to be used toward connect time charges.

E. During the test period, NYSERNet will communicate by telephone, electronic mail, and in writing to assist with the orientation of Test Site staff and provide other assistance as necessary.

F. NYSERNet will provide the Test Site with a copy of the final evaluation report, including the video and the CD ROM.

G. NYSERNet will provide one group training session in the Syracuse metropolitan area, and at least one visit per site.

H. NYSERNet agrees to transfer ownership to the Test Site of all equipment and software specified in this agreement and provided by NYSERNet, on December 31, 1993 for the sum of $1.00 if, in the opinion of NYSERNet, the Test Site meets all of its terms of this agreement, listed in II, below. HOST-DIAL network connectivity , for whatever time remains of the one year period, is included. Sites will be notified when their renewal anniversary date will be in 1994.

II. Performance by the Test Site

A. The Test Site will provide a telephone line for this project's purposes. This line may be shared, it does not have to be dedicated to Project GAIN. It does not have to be a special "data grade" line; voice grade will do.

B. The Test Site will pick up the equipment and software at NYSERNet's offices, and will keep the loaned equipment in its main library building. The equipment will be kept safely in a secure area.

C. The Test Site agrees that top priority in the use of this equipment will be given to the purposes of Project GAIN. Usage may be by staff, public, or both at the discretion of the Test Site.

D. The Test Site agrees to make available the necessary resources to maintain the equipment in working order during the test period.

E. The Test Site shall assume the responsibility for the cost of repairs or replacement to any equipment lent by NYSERNet that is damaged or stolen as a result of the Test Site's sole negligence, or that of its agents, or employees, or volunteers.

F. The Test Site acknowledges that the purpose of the evaluation is to provide NYSERNet with information that it may use to refine and improve Project GAIN. To this end the Test Site agrees to designate a coordinator who will:

1. facilitate data collection by forming a small group (4-7 people) of interested community users (teachers, librarians, students, or patrons), and soliciting their reactions to use of the Internet over the test period.
2. See that the library maintains a minimum of of 3 hours per week of network exploration and use of electronic mail or other applications.
3. maintain a written activity log , and submits it to NYSERNet via electronic mail every two weeks.
4. assist in scheduling occasional telephone interviews with selected individual users or administrators, to be conducted by NYSERNet staff; and assist NYSERNet in arranging site visits.
5. provide NYSERNet with a final report summarizing the Test Site's experience with Project GAIN.

G. The Test Site's designated coordinator will attend the training session scheduled by NYSERNet, and the final evaluation session scheduled by NYSERNet. One additional person may attend from each site. This additional person may be a Board member, volunteer, staff member, or someone from the community who will work with the project at your site.

H. The Test Site agrees to participate and cooperate with the making of a video about this project, and to the release by NYSERNet of appropriate media information announcing the evaluation

project. Further, the Test Site agrees to provide NYSERNet with copies of any press release that it might issue, as well as copies of any articles which might appear in local media and which the Test Site can conveniently obtain.

I. The Test Site agrees to the release of information about its participation in Project GAIN in NYSERNet's final report.

J. The Test Site agrees to return to NYSERNet all equipment provided by NYSERNet by December 31, 1993 if the Test Site cannot or does not meet all of the terms of this agreement, in NYSERNet's opinion.

III. General Provisions

A. The evaluation period and the term of this agreement shall be from the beginning date of June 14, 1993 until the ending date indicated in the previous section.

B. This Agreement sets forth the entire understanding between the parties hereto and may not be modified or amended except by an instrument in writing signed by both parties hereto.

C. Other than as stated in II. F above, all official communications between the parties regarding the terms and responsibilities in the Agreement shall be by prepaid first class mail, in person, or by facsimile transmission:

If to NYSERNet:
Project GAIN
NYSERNet, Inc.
200 Elwood Davis Rd. Suite 103
Liverpool, NY 13o88-6147
Phone: (315) 453-2912
Fax: (315) 453-3052
Attn: Jean Armour Polly

If to the Test Site:

D. This Agreement shall be deemed to have been made in and shall be governed by and interpreted in accordance with the laws of the State of New York.

IN WITNESS WHEREOF, the parties hereto have entered into this Agreement as of the day and year first above written.

FOR NYSERNet:

_____

FOR THE TEST SITE:

_____
(Signature)

_____
(Name)

_____
(Title)

# *Some Great Stories from Project GAIN*

**Literacy**

Hi Steve I am the librarian at Morrisville Public Library, one of the Project GAIN sites. I just wanted to let you know how thrilled Glenn and I were to get your letter. Glenn has been my student for almost five years now and when we started he literally could not read a single sentence...

We have had a good response to our PUBLIB posting and Glenn has hooked upwith another new reader from Missouri who also has a lot in common withGlenn. We are both really excited because it is wonderful for Glenn (and"Charles" to have the opportunity to practice their skills without fear of embarrassment, talk to someone in a similar situation, and actually use the knowledge that they have and develop computer literacy at the same time. ...Glenn has only written one other letter before in his life. [He] might not otherwise have the courage or means to do so. >

Best Regards. Beverly Choltco-Devlin

[Beverly is now moderating two listservs at NYSERNet, one for adult new learners to write each other, and one for teachers of adult new learners.]

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**Collaboration with Peers**

We are the first native nation to be on line .what wonderful news I hadn't realized that we were a first!

[Dr George Baldwin is such] an enthusiastic person --he got everyone there so excited-- it was all native people there at this workshop . we talked about having our own list serve group . he is also staring his own group for native americans .

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**Making Regional Materials Available Online**

Proposal to the Council of Chiefs of the Onondaga Nation
to Make Selected Art Works of Onondaga Nation School Children
Accessible via the Internet

Means: Art works (no larger than 8 1/2" x 11", or photos no larger than this of works larger in size) would be sent to NYSERNet's offices, where they would be scanned on NYSERNet's color scanner and converted to a digital format that can be stored in a computer. These images would be filed in a special section of NYSERNet's computer (known as a gopher). Computer users around the world who are connected to the Internet would be
able access these images by browsing through the menus of NYSERNet's gopher, or by doing a keyword search using a tool known as Veronica.

Rationale: There is no question that students at the Onondaga Nation School are producing art of high quality, which many people around the world would be interested in seeing. By making these images available on NYSERNet's gopher, the Onondaga Nation would be able to increase its visibility around the world, and share something of beauty with the wider world. Students at the school would be able to share their art with a much larger audience than would otherwise be possible. This sharing of artwork could open the door for other sorts of communication with others around the world, broadening the horizons of both students at ONS, other residents of the Nation, and people from all over the world. In short, this is one way the Onondaga Nation can make the rest of the world

aware of its existence. It would also be possible to include text files in this "virtual art gallery" that told something about the Onondaga Nation and its ways.

Subject: Chautauqua Information Center
Cc: smith1@nysernet.ORG (Helene Yurth)
In terms of your thoughts on a "nameable" program for Chautauqua using the Internet, I think your idea on creating a "Chautauqua Information Center" on the gopher is a good one. We all like the idea of having more NYS-generated information in the gopher.

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**Access to Reference Works and Other Resources Over the Net**

From: beverly choltco-devlin <BACHOLTC@SUVM.SYR.EDU
To: wally@nysernet.ORG

Hi Wally! I'm so excited I couldn't wait until tomorrow to send this message to you. Remember a couple weeks back when I sent you the reference question about how to find a newspaper from 1870 and that it was a personal challenge to me. You suggested that I try FirstSearch.
Let me give you a little more background. The patron who requested it is county judge who came to me as a last resort to find this article for a presentation he was doing. I had done a presentation with him on a totally unrelated topic in the spring and at the time I was introducing myself to him had told him about the NYSERNet grant. He called about a month ago and said that he really needed a copy of this original article from 1870 and could I try to help. He had exhausted all other ideas. Anyway after trying a bundle of online university catalogs which I thought have this type of resource and checking through many gophers I sent my letter to you.

I explored First Search several times. (The information that he had given me was sketchy because it had been taken from an original letter from that era.) Finally on Saturday after going through about 750 citations I came upon one that looked like it just might be the one. I copied it down because I haven't had a chance to try the printing business yet. I was cautiously ecstatic. Not twenty minutes after I found this (and the three libraries where it was supposedly located) this patron comes into the library to see if I had found anything yet and to let me know that the presentation was TUESDAY (tomorrow) I was a little surprised, and he was concerned because the document was what he needed. I told him I would try what I could. So I spent Sunday and this a.m. calling the libraries listed hoping against hope that one of them would be willing and able to check if it was the correct newspaper first of all with the desired article and secondly if they would be willing to FAX it to me. Finally, using my most professional library director voice (I had to keep my excitement about 20 levels lower than it was) I respectfully asked the Reference librarian at the University of Virginia if this was possible. WELL!!!! I had it within a half hour (thanks to a Friend of the Library who let me use her FAX resource.

I looked at the FAXED newspaper page with a mixture of trepidation and excitement. There it was exactly what he wanted. I will tell you that there a few feelings to match the pride, joy and headiness that I felt when I handed that article into his hands when he came in to pick it up this afternoon. The joy on his face was pretty special too. THANK YOU THANK YOU THANK YOU for enabling me to experience this sense of

professional and personal pride and for allowing our small little
library to have the capability to provide this service. I'm on cloud nine!!!

Best regards,
Beverly

The Baldwinsville Public Library has an Internet connection as part of NYSERnet's Project GAIN, we have been connected since June. The staff has used it for answering reference questions. We do not have the space tocarry hard copy of federal laws and regulations and the Internet has helped with that. I can think off-hand of two questions where the patrons was provided with the information they needed whereas in the past we would have had to refer them to the law library in Syracuse. The first patron requested information on the family medical leave act, I did a Gopher search and came up with the statement that Clinton made when he signed the act and via LOCIS I found the bill, its sponsors, amendments, etc. Another patron needed information in regards to the use of social security numbers, the children's librarian found what he needed via a gopher search. A retired gentleman was looking for information on the Civilian Pilot Training Program, which he worked on during WWII. A search of our collection found a couple of paragraphs, I then searched the Library of Congress and NYS Library catalogs via the net and was able to identify a couple of books on the project and obtained them via interlibrary loan. I also used Gopher to obtain a list of Clinton appointees for someone who was looking for the current head of a particular government agency. These are all examples where the patrons were grateful and without the Internet we would not have been able to obtain the information as quickly or possibly not at all.

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>From a letter by Mary Stull to D.J. Stern (Director of Woodstock Library)

Dear D.J.,

Trying to make up a list of the uses of NYSERNet is difficult since I am still working at finding all there is to benefit my class. I have used it to make contact with the classroom of the Onondaga Nation School and a private school in Genoa, Italy. We hope to become pen pals with both schools.

Naturally the AskERIC network is extremely useful to a teacher. From it I have obtained lesson plans which I have already used in my classroom The ideas are new and exciting ways of presenting materials to my students.

Our school is working on a new evaluation form and portfolio assessment forms. AskERIC was a great source of information as to what is being used in other schools, and what research there is on these subjects.

From AskERIC I have also made contact with the services provided bySkywatch, Newton's Apple, and Carmen Santiago. These are all resources I could not have obtained anywhere else in the area.

As I become more familiar with what is "out there" I hope to bring it into the classroom. Our next project will be to find information about other countries and cultures. My students do numerous projects on people from other countries and cultures. This will be an oppertunity to have instant and current contact with these people.

By mid-year I hope to be using the White House briefings which are available on the network. Right now my students do not yet possess the skills to work with that type of information.

One project I myself would like to become a part of is a reading group which concentrates on children's literature. Through the Woodstock Library I have become acquainted with several English and Australian authors. I would like to learn about other children's writers (other than the standard American writers which seem to be present in most classrooms).
Through NYSERNet I can accomplish this, and use these authors in my classroom this year.

The possibilities for the use of NYSERNet in the classroom seems to grow each time I work my way through any map of the system I'm in. By the end of the year I'm sure I will have thousands of great ideas for its use in the classroom.

Thank you for allowing me to be a part of this project.
Mary Stull Teacher, Woodstock Children's Center

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From: oldforg4@nysernet.ORG
Subject: new this week

Hello internetters:

How's everybody doing?

Well, I've learned much this week and am GAINing new confidence in tip toeing my way through the network.

I have been able to successfully ftp files from a wide variety of sources from music to howmbrewing to stress in the workplace to Russian archives and back again..

As I sit in front of the keyboard and people I know will come in the library and ask what I'm doing. Before you know it, I'm helping them access the info they're looking for. I helped a friend find out about Medical Techs. at Syarcuse Uni. Another friend wanted to know about any interdiciplinary books or research that might be going on. Wow!! Gopher was full of stuff.

I have also met a lot of very interesting people through news groups and I am interacting with some on a regular basis. It amazes me the number of people out there that not only have the same interests as I do, but their willingness to help.

My horizons are certainly being expanded beyound the vanishing point.
See you next week. In the meantime, SET THE CONTROLS FOR THE SUN!